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MAY 15 1942

COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

MAY 1942

FILM SERVICE, INC.

1030 N. EIGHTH STREET
MILWAUKEE, WISCONSIN

Reo Motors, Inc.
Lansing, Michigan

Attention: Mr. E. R. Kroble

Gentlemen:

The fact that we have purchased forty-six Reo trucks since June, 1927, is sufficient evidence that they are especially adapted to our type of work.

The slogan of the theatre business is "The Show Must Go On", and many times we carry in one truck load, films on which the rentals aggregate many thousands of dollars and films must be delivered in time for theatre opening.

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Very truly yours,
FILM SERVICE, INC.

P.S. - Just purchased
two more Reo trucks

Manager.

Another example of what REO
TAILORED TRANSPORTA-
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tors to keep trucking costs at
a minimum and to maintain
delivery schedules. Through-
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Reo is writing a new chap-
ter in modern transportation
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on the books of Reo fleet
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SPEED WAGONS and
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POWERFUL, quality-built Dodge *Job-Rated* trucks are serving the need of the hour . . . war production on a mass production basis!

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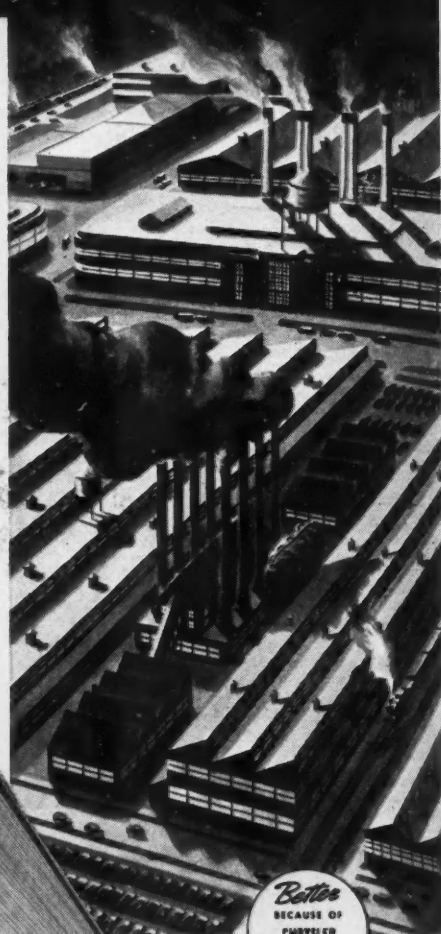
Again and again these trucks are proving Dodge Dependability. They are proving, too, that a *Job-Rated* truck—with the right-sized engine, clutch, transmission, brakes, and axles—is a more economical and longer-lasting truck.

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DODGE

Job-Rated **TRUCKS**

COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

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EDITORIAL CONTENTS

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FEATURE ARTICLES

Washington Runaround	17
ODT Orders Compulsory Conservation	18
Discussion of Truck Rationing	22
Mason & Dixon's Maintenance Fixin's	24
How Tires Affect Axles	28
Save by Salvage	32
Byers Goes All Out on Tires	34
Figuring Operating Efficiency	37
Maintenance Plans of ODT	38
Get In the Scrap	40
Truck-Trailers Adapted to Mass Transportation	51
Emergency Tire Rations for Trucks	54

DEPARTMENTS

Shop Hints for Fleet Shops	31
New Products on Parade	42
CCJ Newscast	44
New Truck Registrations	44
Free Money Makers for You	90
CCJ Quiz	114
Free Books	115
Advertisers' Index	132

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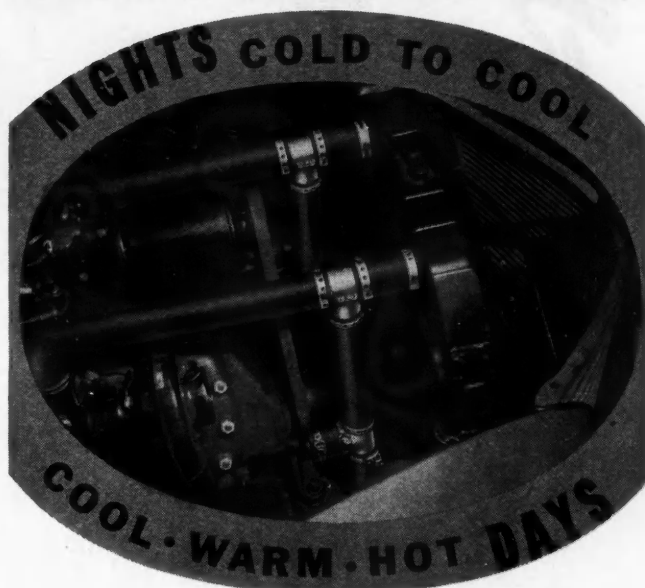
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MAY, 1942

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How Large Is Ration Pool

The number of trucks in the rationing pool, which started with an estimate of 190,000 and then dwindled to 160,000, is now estimated at 150,000. ODT breaks this down into 45,000 light (under 9000 lb. gross); 95,000 medium (9000 to 16,000 lb. gross), and 10,000 heavy (16,000 lb. and over) units. Anybody is entitled to an estimate in the absence of an official inventory. But one manufacturer who is in position to know the inventory of his dealers believes that the 150,000 estimate is high. Knowing the ratio which his dealers' inventory has borne to total industry inventory in past years, this manufacturer estimates the truck pool at between 120,000 and 135,000 trucks.

Rationers Under Pressure

The Allocations Section of ODT is under pressure from many sides. Long distance calls from operators who have learned locally that their applications have been sent to Washington consume and frankly waste time. The truck trade leads in letters of complaint, a matter which is discussed elsewhere in this issue. United States Senators add their weight to the pressure. The last time we checked, the Section was averaging 20 calls a day from Senators egged on by constituents.

ODT Unfinished Business

Unfulfilled promises of ODT: Naming of Local Appeal Boards; Posting of Names of Operators Granted Certificates of Transfer. Taking its time about the local appeal boards, ODT has named a three-man Central Appeal Board consisting of M. V. Fredehagen, Office of Civilian Defense, Washington; W. Foster Banks, Motor Haulage Co., Brooklyn, and J. B. Pymer, The City Baking Co., Baltimore. Regarding posting, it is understood that the names of the lucky winners will be posted in Local Allocations Offices.



WASHINGTON RUNAROUND

How Large is Ration Pool . . . Rationers Under Pressure . . . ODT Unfinished Business . . . ODT Conservation Musts . . . Tough On Tire Wasters . . . Emergency Rations Granted . . . Tire Experimenters Busy . . . Synthetic Rubber Experting . . . Truck Tire Quota Upped . . . U. S. Buys Up Trailers . . . Truck Production Extended . . . Maintenance Matters . . . Gripe of the Month

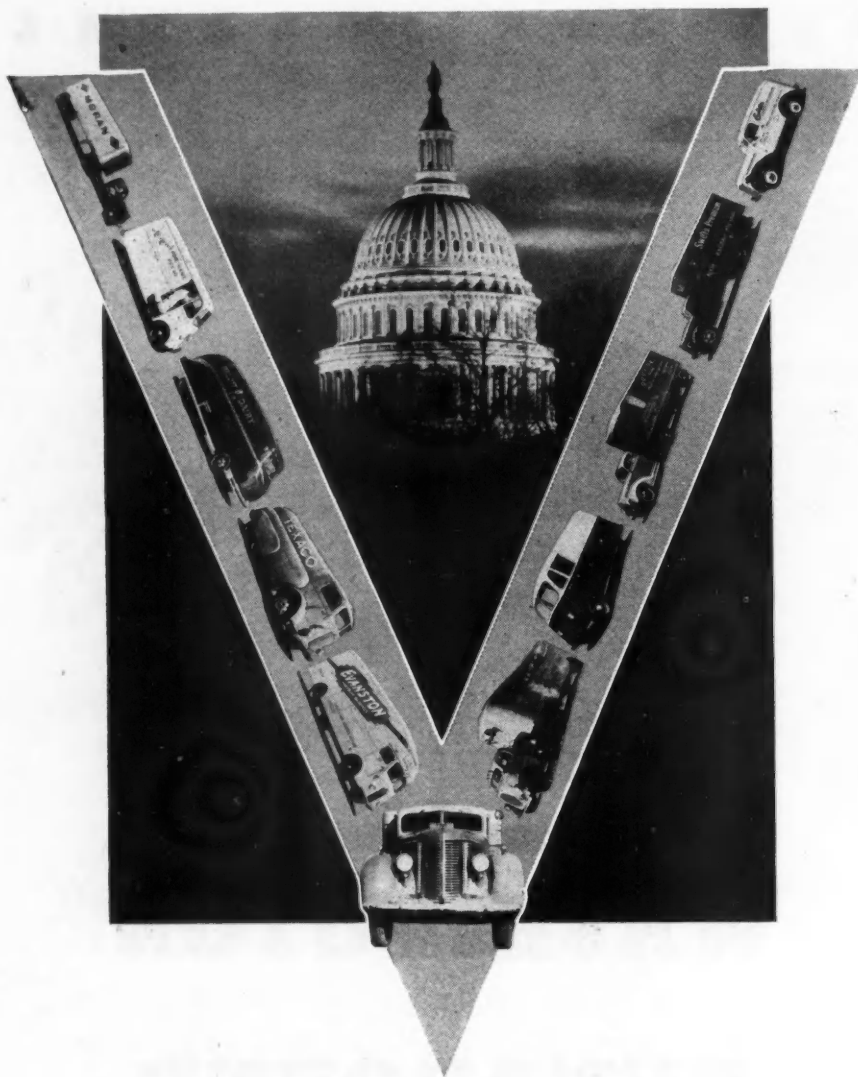
by GEORGE T. HOOK, Editor

ODT Conservation Musts

The Office of Defense Transportation pushed conservation of equipment into a higher gear late in April with four General Orders covering all carriers. These are published in detail elsewhere in this issue. Fuller truck loads are demanded of all over-the-road carriers, and local car-

riers must effect a minimum mileage reduction of 25 per cent. Local carriers of the for-hire class and many in the private class still have a green signal, as we read the Order. The red light seems to be focused on private carrier retail delivery operations.

(TURN TO PAGE 114, PLEASE)



ODT ORDERS COMPULSORY CONSERVATION

General order requires local carriers to reduce mileage 25 per cent; common, contract & private over-the-road haulers must improve load factor of trucks

TO effect conservation of motor equipment the Office of Defense Transportation issued four General Orders on April 20 covering Common, Contract and Private Over-the-Road Carriers and Local Delivery Carriers. In each class certain types of carriers are exempted from certain provisions. The effect of the Local Carrier exemptions is largely to exempt all but retail delivery operations.

The orders were signed by Joseph B. Eastman, Director of Defense Transportation, who prefaced the orders with the statement that they were being issued "By virtue of the authority vested in me by Executive Order, and in order to conserve and providently utilize transportation facilities and equipment, including rubber tires; to prevent shortages in motor truck equipment necessary for the prompt and continuous movement of necessary traffic, and to provide for the conservation of vital equipment, material, and supplies, including rubber, the attainment of which purposes is essential to the successful prosecution of the war."

In an explanatory statement accompanying the orders, ODT said:

"Each motor carrier knows best where most of the mileage reductions can be made in its own operations. We ask that each carrier thoroughly study its own operations in order to accomplish the maximum results intended by the orders.

"We ask further that each carrier adjust its services to comply with the spirit of the orders and we are confident all carriers involved will cooperate in attaining the required objective. Relying upon this belief, the orders are much less rigid in their requirements than would otherwise be the case.

"The attainment of full loads at all times is the objective of the Common, Contract and Private Carrier Orders. We realize this cannot be accomplished to perfection. Nevertheless, we must strive toward such a goal in order to accomplish the maximum results.

"We have established the tire carrying ability of the vehicle as a basis of computing the gross load. By merely deducting the unladen weight of the vehicle from the gross permissible weight, we arrive at the net payload. (This is explained in

Appendix 1.) Normally, many vehicles are loaded much in excess of their tire capacity. We are asking each carrier (Local Carriers excepted—Ed.) not to overload beyond 20 per cent. Tires will give maximum mileage if properly cared for and if not overloaded beyond 20 per cent. Tires are very vital in our war effort; it's almost a sacred duty to protect them properly.

"We are not unmindful that the effects of these Orders may, in some instances, cause inconvenience to the carriers involved. They were framed to avoid such injuries as far as possible. On the other hand, the war emergency requires that individual rights or interests of all our citizens be subordinated wherever necessary to the common good. We rely upon the patriotism of the carriers and shippers who will be affected by these Orders to cooperate in the highest possible degree in making them effective even though they appear to affect them adversely."

Following are the Orders, communications regarding which should be addressed to John L. Rogers, Director, Division of Motor Transport, Office of Defense Transportation, Room 4211 Interstate Commerce Commission Bldg., Washington, D. C.

COMMON CARRIERS OF PROPERTY

(General Order O.D.T. No. 3, Part 501—Conservation of Motor Equipment)

EFFECTIVE JUNE 1, 1942

501.4 DEFINITIONS. (See Table 1.)

501.5 ELIMINATION OF WASTE. On and after the effective date specified herein, every common carrier shall:

(a) Eliminate waste in operation and in duplication of parallel services, and curtail schedules and services to the extent necessary to carry out the purposes of this Order.

(b) Conserve and properly maintain tires, motor truck equipment and other facilities necessary in conducting the business of a common carrier.

501.6 LOADING AND OPERATING REQUIREMENTS. On and after the effective date specified herein, no common carrier shall:

(a) Operate a motor truck transporting a gross load which exceeds by more than twenty (20) per cent its capacity as defined herein.

(b) Operate a motor truck in over-the-road service unless such truck is loaded to capacity at origin point and will be loaded to not less than seventy-five (75) per

(TURN TO PAGE 20, PLEASE)

TABLE 1—DEFINITIONS (Alphabetically)

CALL BACKS—The term "call backs" means every call by a vehicle of a local carrier at the premises of any one person subsequent to the first call on any given day, and included calls made for the sole purpose of picking up property for return to consignor, or for making collections.

CAPACITY—The term "capacity" means the rated load-carrying ability of the tires on the motor truck (as shown in Appendix No. 1 attached hereto). Where the commodity is of light density the total space available for a load shall be the measure of capacity.

CIRCUITOUS ROUTE—The term "circuitous route" means any route or routes or combination thereof which exceeds the most direct highway route by ten (10) per cent.

COMMON CARRIER—The term "common carrier" means any person which holds itself out to the general public to engage in the transportation of property in over-the-road service by motor truck for compensation, regardless of the designation of such person under any Federal or State statute.

CONTRACT CARRIER—The term "contract carrier" means any person other than a common carrier as defined above which engages in transportation of property in over-the-road service for compensation.

LOCAL CARRIER—The term "local carrier" includes every person engaged in the transportation of property by vehicle for compensation or in the furtherance of or incidental to any commercial enterprise, within any municipality or other urban community, or between contiguous municipalities or communities, or within a zone adjacent to and commercially a part of any such municipality or municipalities or communities, or in making hauls which do not exceed 15 miles in length.

MOTOR TRUCK—The term "motor truck" means either (1) a straight truck, (2) a combination truck-tractor and semi-trailer, (3) a full trailer, (4) or any combination thereof.

OFFICE—The term "office" means the Office of Defense Transportation.

OVER-THE-ROAD—The term "over-the-road" service means all operations except those wholly within any municipality or urban community, or between

contiguous municipalities or urban communities, or within a zone adjacent to and commercially a part of any such municipality or municipalities or urban communities, or except hauls not more than fifteen (15) miles in length.

PERSON (As used in the case of Private Carriers)—The term "person" means any individual, firm, copartnership, corporation, company, association, including a farm cooperative association as defined in the Agricultural Marketing Act, approved June 15, 1929, as amended, or joint stock association, or Government or Governmental Agency, and includes any trustee, receiver, assignee, or personal representative thereof.

The above definition applies to the Common and Contract Carrier orders with the exception of the words shown in light face type.

The Local Delivery Carrier definition of Person is: The term "person" means any individual, firm, copartnership, corporation, company, association, including any trustee, receiver, assignee, or personal representative thereof, and any agency of the United States or of any State not herein-after exempted.

PRIVATE CARRIER—The term "private carrier" means every person other than a common carrier or a contract carrier as defined above who transports property by motor truck in over-the-road service.

PROPERTY—The term "property" means all material, equipment and supplies of every kind, capable of being transported by motor truck.

SPECIAL DELIVERY—The term "special delivery" means a delivery by vehicle made at the special instance or request of a particular person other than as a part of a regular scheduled delivery service.

SPECIAL EQUIPMENT—The term "special equipment" means any motor truck the primary carrying capacity of which is occupied by mounted machinery, or by a mounted tank or tanks designed to carry bulk liquids; low-bed motor trucks, pole trailers or pipe dollies.

VEHICLES—The term "vehicle" means any rubber-tired vehicle propelled or drawn by mechanical power or by horses. (Applies only to Local Delivery Carriers.)

TABLE 2—EXEMPTIONS

A. Exemptions (All Over-the-Road Carriers)

The provisions of Loading and Operating Requirements sub-section (b) of the Common, Contract and Private Carrier Orders shall not apply to or include the following:

1. A motor truck exclusively containing explosives or dangerous articles, as the latter are defined in 18 U. S. Code 383.

2. A motor truck controlled and operated by any person or persons principally engaged in farming when used in the transportation of agricultural commodities and products thereof from a farm or farms, or in the transportation of farm supplies to a farm or farms.

3. Any motor truck coming within the definition of special equipment.

4. Any motor truck or vehicle owned, controlled or operated by the armed forces of the Federal or a State Government.

5. Any motor truck operated exclusively in behalf of armed forces of Federal or a State Government.

6. Any motor truck used exclusively in the maintenance of any public utility.

7. Any motor truck operated exclusively in the furtherance of public health and safety.

B. Exemptions (Local Delivery Carriers)

The provisions of the Local Delivery Carrier Order shall not apply to the following:

Motor trucks described in items 2 and 4 above. To local carrier vehicles operated exclusively in connection with the construction and maintenance of essential telegraph, telephone, organized radio communications, electric light and power, gas, water supply, sewage disposal, garbage disposal, and sanitation services.

To that portion of the business of any local carrier rendered in performing pick-up and delivery service for line-haul motor, rail, express, air and water carriers, or for freight forwarders.

TABLE 3—OPERATION BY SPECIAL AUTHORITY

The provisions of the Orders shall not apply to any motor truck or vehicle which is engaged in a move-

ment that is authorized by special or general permit of the Office of Defense Transportation.

TABLE 4—RECORDS & REPORTS

A. Every over-the-road carrier—common, contract and private—shall prepare and maintain such records and make such reports, as the Office of Defense Transportation may hereafter require for the purpose of these Orders, and keep such records available and open for inspection at all reasonable times for investigation by the Office.

B. Every carrier covered by the Local Delivery

Carrier Order shall prepare and maintain records as to mileage performed and steps taken to comply with the requirements of the section dealing with special deliveries, call backs, number of deliveries and reduction of mileage, and shall prepare and maintain such other records as the Office of Defense Transportation may hereafter require. All such records shall be kept available and open for inspection to representatives of the Office at all reasonable times.

ODT ORDERS COMPULSORY CONSERVATION

(CONTINUED FROM PAGE 19)

cent of capacity on the return trip; or unless loaded to seventy-five (75) per cent of capacity at origin point and will be loaded to capacity on the return trip: PROVIDED, however, that no intermediate point at which a portion of a load has been discharged shall be deemed to be a point of origin, but the point at which the last portion of a load has been discharged shall be deemed to be the point of the beginning of a return trip; and, PROVIDED further, that when a motor truck has moved, loaded to capacity, in the direction of the heavy general flow of traffic by motor truck, it may be returned to its origin point partially loaded or empty, if there is no property in the possession of or on order to any common carrier awaiting transportation to, beyond or intermediate to said origin point to which said motor truck is returning, in a quantity which is beyond the capacity of such other carrier to transport within the time limit provided in Section 501.12 hereof.

(c) Accept or receive any property for transportation or transport any property, over any circuitous route or routes, except when no carrier capable of performing the service over a direct route is available. PROVIDED, however, that nothing contained in this sub-section shall prevent a common carrier from operating over a circuitous route when the direct route may be unsafe or unusable or may be more destructive to tires or motor trucks.

501.7 OPERATIONS WHEN EMPTY. Nothing contained in sub-section 501.6 (b) of this Order shall prevent a motor truck from moving empty from the point of final discharge of loading to a nearby point, where traffic is available for loading, if such traffic cannot be transported by any carrier under any of the conditions set out in said sub-section 501.6 (b).

501.8 EXEMPTIONS. (See A in Table 2.)

501.9 OPERATIONS BY SPECIAL AUTHORITY. (See Table 3.)

501.10 SUBMISSION OF PLANS. Whenever joint action between two or more common carriers is contemplated in order to accomplish any of the purposes of this Order, such carriers may formulate and submit to this Office for consideration a plan or plans designed to accomplish such purposes by one or more of the methods described below:

(a) Alternate or stagger motor truck schedules between two or more points.

(b) Reciprocally exchange shipments or property between two or more points.

(c) Pool traffic, revenues, or both, between two or more points.

(d) Jointly load or operate a motor truck or trucks between two or more points.

(e) Divert traffic, lease equipment, operate joint terminals or pick-up or delivery vehicles.

(f) Establish arrangements with other carriers for the interchange of equipment.

(g) Appoint one of their own number or any other person or carrier to act as its or their individual, common or joint agent, to concentrate, receive, load, forward,

carry, unload, distribute and deliver property; receive, account for, and distribute gross or net revenues therefrom, or otherwise handle or conduct the carrier's business as carriers of property upon just and reasonable terms and conditions. PROVIDED, that this Order shall not be construed to authorize any carrier or carriers to operate in any of the methods described in this section unless directed so to do by the Interstate Commerce Commission or a State regulatory body or the Office of Defense Transportation.

501.11 INTERCHANGE OF TRAFFIC. Every common carrier whether by rail, motor, water or otherwise shall accept and receive from any other carrier and transport all shipments of every kind. Such shipments shall be handled and transported in the same expeditious and efficient manner as shipments of a like nature received from any other source: PROVIDED, that no carrier shall be required to accept or receive shipments it is not authorized to transport, or at a point or points which the receiving carrier is not authorized to serve, or beyond his or its ability to transport.

501.12 Holding shipments. No common carrier shall hold, carry over, store, or warehouse any shipments at any one station, except the final destination of the shipment, for longer than 36 hours, or at two or more such stations for an aggregate period of more than 48 hours, except where there is no other carrier or carriers capable of transporting the shipments consistently with the provisions of this Order.

501.13 Records and reports. (See A in Table 4)

501.14 CARRIER LIABILITY. Common carrier responsibility to the owner of the property and among the participating carriers shall be as provided by law for initial, terminating, intermediate or delivering carriers.

501.15 DIVISION OF REVENUES. Every common carrier by rail, motor, water or otherwise shall establish just, fair and equitable divisions of revenues derived from transportation performed pursuant to this Order. Unless the division of revenues from any interchanges made pursuant to the provisions of this Order shall have been agreed upon by the interested carriers, or shall have been prescribed by the Interstate Commerce Commission, or by the appropriate State regulatory body, such revenues shall be divided as this Office shall order.

CONTRACT CARRIERS OF PROPERTY

(General Order O.D.T. No. 4, Part 501—Conservation of Motor Equipment

EFFECTIVE JUNE 1, 1942

501.16 Definitions. (See Table 1)

501.17 ELIMINATION OF WASTE. On and after the effective date specified herein, every contract carrier shall:

(a) Eliminate waste in operations and curtail schedules and services to the extent necessary to carry out the purposes of this Order.

(b) Conserve and properly maintain tires, motor truck equipment, and other facilities necessary in conducting the business of a contract carrier.

501.18 LOADING AND OPERATING REQUIREMENTS. On and after the effective date specified herein, no contract carrier shall:

(a) Operate a motor truck transporting a gross load which exceeds by more than twenty (20) per cent its capacity as defined herein.

(b) Operate a motor truck in over-the-road service unless such truck is loaded to capacity at origin point and will be loaded to not less than seventy-five (75) per cent of capacity on the return trip; or unless loaded to seventy-five (75) per cent of capacity at origin point and will be loaded to capacity on the return trip; PROVIDED, however, that no intermediate point at which a portion of a load has been discharged shall be deemed to be a point of origin, but the point at which the last portion of a load has been discharged shall be deemed to be the point of the beginning of a return trip.

(c) Accept or receive any property for transportation or transport any property, over any circuitous route or routes, except when no carrier capable of performing the service over a direct route is available. PROVIDED, however, that nothing contained in this sub-section shall prevent a contract carrier from operating over a circuitous route when the direct route may be unsafe or unusable, or may be more destructive to tires or motor trucks.

501.19 OPERATIONS WHEN EMPTY. Nothing contained in sub-section 501.18 (b) of this Order shall prevent a motor truck from moving empty from the point of final discharge of loading to a nearby point, where traffic is available for loading, if such traffic cannot be transported by any carrier under any of the conditions set out in said sub-section 501.18 (b).

501.20 Exemptions. (See A in Table 2)

501.21 Operations by Special Authority. (See Table 3)

501.22 SUBMISSION OF PLANS. Whenever joint action between two or more contract carriers is contemplated in order to accomplish any of the purposes of this Order, such carriers may formulate and submit to this office for consideration, a plan or plans designed to accomplish such purposes by one or more of the methods described below:

(a) Alternate or stagger motor truck schedules between two or more points.

(b) Reciprocally exchange shipments or property between two or more points.

(c) Pool traffic, revenues, or both, between two or more points.

(d) Jointly load or operate a motor truck or trucks between two or more points.

(e) Divert traffic, lease equipment to a common or contract carrier. PROVIDED,

APPENDIX NO. 1

The capacity of any motor truck shall be determined by multiplying the number of tires, of the size and description, mounted on the running wheels of such motor truck by the number pounds of rated load carrying ability of such tires as designated in this Appendix; from the result of this computation there shall be deducted the unladen weight of the motor truck; the remaining balance, for the purposes of this Order shall be the capacity of such motor truck as defined herein.

EXAMPLE: Truck and trailer with 10 tires, size 9.00-20, each of which has load-carrying ability of 3450 lb. The unladen weight of combination is 14,500 lb. Multiplying 10 by 3450 lb. equals 34,500 lb., minus 14,500 lb. unladen weight leaves 20,000 lb. load to be carried. (General Orders allow 20 per cent additional load—Ed.)

Description of Tire Size	No. of Plies	Rated Load Carrying Ability lb. per Tire	Description of Tire Size	No. of Plies	Rated Load Carrying Ability lb. per Tire	Description of Tire Size	No. of Plies	Rated Load Carrying Ability lb. per Tire
15"	6	1500	8.25-15	10	2275	12.00-20 (11.25-20)	14	5475
15"	8	1700	8.25-15	12	2600	12.00-20/40x10	16	5875
6.00-16	6	1130	8.25-18	10	2550	12.00-22	14	5800
6.00-17	6	1250	8.25-18	12	2925	12.00-24 (11.25-24)	14	6150
6.00-20	6	1400	8.52-20	10	2750	12.00-24/44x10	16	6600
6.00-20/30x5	8	1700	8.25-20	12	3150	13.00-20 (12.75-20)	16	6750
6.50-16	6	1290	8.25-22	10	2950	13.00-24 (12.75-24)	16	7575
6.50-17	6	1500	8.25-24	10	3125	14.00-20 (13.50-20)	16	8200
6.50-18	6	1575	8.25-24	12	3600	14.00-20 (13.50-20)	18	8700
6.50-20	6	1700	9.00-15	10	2875	14.00-24 (13.50-24)	16	9150
6.50-20/32x6	8	1950	9.00-15	12	3200	14.00-24 (13.50-24)	18	9700
7.00-15	6	1415	9.00-18	10	3225	#10	6	1100
7.00-15	8	1575	9.00-18	12	3600	#11	6	1100
7.00-16	6	1485	9.00-20	10	3450	#12	6	1200
7.00-16	8	1650	9.00-20/36x8	12	3850	#13	6	1300
7.00-17	6	1550	9.00-22	10	3675	#14	6	1400
7.00-17	8	1725	9.00-24	10	3925	#15	6	1500
7.00-18	8	1800	9.00-24/40x8	12	4375	#16	6	1600
7.00-20	8	1950	10.00-15 (9.75-15)	12	3375	#17	8	1700
7.00-20/32x6	10	2250	10.00-18 (9.75-18)	12	3775	#18	8	1800
7.00-24/36x6	10	2575	10.00-20 (9.75-20)	12	4000	#19	8	1900
7.50-15	8	1825	10.00-20/38x9	14	4350	#20	10	2000
7.50-15	10	2225	10.00-22 (9.75-22)	12	4275	#22	10	2200
7.50-16	6	1660	10.00-24 (9.75-24)	12	4550	#28	10	2800
7.50-16	8	1850	10.00-24/42x9	14	4925	#34	10	3400
7.50-17	8	2000	11.00-18 (10.50-18)	12	4200	#40	12	4000
7.50-18	8	2100	11.00-20 (10.50-20)	12	4500	#42	12	4200
7.50-18/32x7	10	2500	11.00-20 (10.50-20)	14	4850	#44	12	4400
7.50-20	8	2250	11.00-22 (10.50-22)	12	4750	#48	12	4800
7.50-20/34x7	10	2700	11.00-24 (10.50-24)	12	5000	#50	12	5000
7.50-24	8	2550	11.00-24 (10.50-24)	14	5400	#52	12	5200
7.50-24/38x7	10	3100	12.00-18 (11.25-18)	14	5125			

that this Order shall not be construed to authorize any carrier or carriers to operate in any of the methods described in this section unless directed so to do by the Interstate Commerce Commission, or a State regulatory body, or the Office of Defense Transportation.

501.23 Records and Reports. (See A in Table 4)

PRIVATE CARRIERS OF PROPERTY (General Order O.D.T. No. 5, Part 501—Conservation of Motor Equipment)

EFFECTIVE JUNE 1, 1942

501.24 Definitions. (See Table 1)

501.25 ELIMINATION OF WASTE. On and after June 1, 1942, every private carrier shall:

(a) Eliminate waste in operations and conserve and properly maintain tires, motor truck equipment and other facilities necessary in conducting the transportation by the carrier, and curtail schedules to the extent necessary to carry out the purposes of this Order.

501.26 LOADING AND OPERATING REQUIREMENTS. On and after the effective date specified herein, no private carrier shall:

(a) Operate a motor truck transporting a gross load which exceeds by more than twenty (20) per cent its capacity as defined herein.

(b) Operate a motor truck in over-the-road service unless such truck is loaded to capacity at origin point and will be loaded to not less than seventy-five (75) per cent of capacity on the return trip; or unless loaded to seventy-five (75) per cent of capacity at origin point and will be loaded to capacity on the return trip: PROVIDED, however, that no intermediate point at which a portion of a load has been discharged shall be deemed to be a point of origin, but the point at which the last portion of a load has been discharged shall be deemed to be the point of the beginning of a return trip.

(c) Use a circuitous route in any transportation movement, except when no carrier capable of performing the service over a direct route is available.

501.27 OPERATIONS WHEN EMPTY. Nothing contained in sub-section 501.26 (b) of this Order shall prevent a motor truck from moving empty from the point of final discharge of lading to a nearby point, where traffic is available for loading, if such traffic can not be transported by any carrier under any of the conditions set out in said sub-section 501.26 (b).

501.28 Exemptions. (See A in Table 2)

501.29 Operations by Special Authority. (See Table 3)

501.30 Records and Reports. (See A in Table 4)

LOCAL DELIVERY CARRIERS (General Order O.D.T. No. 6, Part 501—Conservation of Motor Equipment)

501.31 Definitions. (See Table 1)

501.32 SPECIAL DELIVERIES, CALL BACKS, NUMBER OF DELIVERIES. Effective May 15, 1942, no local carrier shall:

(a) Make any special deliveries except to hospitals and the armed forces of the United States and except deliveries of medicines and other necessary supplies for the protection in emergencies of the public health, life, and safety.

(b) Make any call backs.

(c) Make more than one delivery on any one day to any one person, except special deliveries authorized by sub-section 501.32 (a) of this section; provided, however, that when one day's shipment or shipments to any one person exceed the capacity of a single vehicle, then and in that event delivery of such shipment or shipments shall be considered as one delivery.

501.33 REDUCTION OF MILEAGE. Effective June 1, 1942, each local carrier shall reduce the total monthly vehicle mileage of rubber-tired vehicles in a minimum amount equal to 25 per cent of the total mileage of vehicles in operation during the same calendar month of the year 1941 exclusive of the mileage eliminated as a result of the requirements of Section 501.32 of this Order. In the event any local carrier was not engaged in operation during the corresponding calendar month in 1941, the mileage of vehicles operated by such local carrier during the month of May, 1942, shall be used as a basis for computing the reduction in monthly vehicle mileage as herein required.

501.34 PROPOSED PLANS FOR JOINT ACTION. All joint and collective action taken by local carriers in compliance with this Order shall be in conformity with the terms and provisions of the joint statement issued by the Office of Defense Transportation and the Department of Justice dated March 12, 1942. (See COMMERCIAL CAR JOURNAL, April, 1942, page 132—Ed.) In accordance with such statement, proposed plans for pooled or cooperative deliveries, for curtailment services, or for entering into other arrangements involving joint action by local carriers may, if desired, be submitted to this Office for consideration and approval. In order that this Office may be informed concerning plans which have been or are hereafter placed in operation without such prior submission for consideration and approval, a copy of each such plan shall be filed with this Office.

501.35 Records and Reports. (See B in Table 4)

501.36 Exemptions. (See B in Table 2)

THE first month of truck and trailer rationing brought a flood of applications—50,000 of them—and in their wake a mounting wave of private grumbling and dissatisfaction and of outright complaint lodged with ODT and WPB officials charged with the rationing.

The dissatisfaction, expressed by both operators and the trade—with the latter more expressive and insistent that something be done, arose from the fact that of 50,000 applications received at Local Allocations Offices only the Class 1 and 2 applications were given any consideration during the first month, and from the supplementary fact that of the 10,000 Class 1 and 2 applications only 4,000 were granted PD-321 Certificates of Transfer. It is understood that only a few hundred of the 10,000 applications were rejected and the rest were returned because they were improperly or inadequately filled out.

Early in April the Allocations Section of ODT ordered the Local Allocations Officers to send in the Class 3 applications which met with their approval. But there were indications that the disposition of Class 3 applications would merely add to the dissatisfaction. Among these indications was an official ODT statement aimed at discouraging applications from "operators seeking to buy commercial vehicles as they normally would under a business-as-usual economy." ODT urged operators not to apply for new vehicles unless they were certain that the new vehicles would "actually help, directly or indirectly, in winning the war." From this it would appear that unless an application measured up to the war-winning standard it would stand little chance of being approved.

This is certain to add to the alarm of the trade, which is in the middle and holding the enormous bag of 150,000 trucks supposed to be in the rationing pool. The truck dealer is in the middle and alone. Except for those that have branches, factories are not involved in the problem and most of the factories not involved are not concerning themselves with the plight of dealers. It is the dealer whose financial investment is in greatest jeopardy. He has the trucks, the factory has its money and the government has its taxes. The trucks represent a huge financial investment and a burden, as matters stand. The

A DISCUSSION OF TRUCK RATIONING

"When will trucks be rationed?" operators ask and the trade wonders. The rationers sympathize with the trade's plight, propose relief, and ask operators to understand their position and their problem



dealer—the entire trade—needs and wants relief, hence the complaints.

The trade complains—

1. That applications are being returned on mere technicalities and feels that a less captious attitude should prevail among those passing on applications.

2. That the application form should be simplified, some of the questions being too technical and legal to be answered properly and intelligently, and others serving no sound purpose that has to do with rationing, one question in particular certain to scare out honest answers and encourage subterfuge.

3. That unless applications are granted at a higher rate than during the first month equipment will deteriorate because much of it is stored in the open and subject to the depreciating effects of the elements.

4. That ODT and WPB should not adopt a policy of extreme caution simply because 50,000 applications were received in the first month. This 50,000, it is argued, represents a four-month demand built up by the freeze during the months of January and February and 10 days of March and by the fact that many of the trucks ordered with special equipment from the middle of November through De-

PD-321

3-9-42

WAR PRODUCTION BOARD
DIVISION OF INDUSTRY OPERATIONS
AUTOMOTIVE BRANCH
Washington, D. C.

ORIGINAL

Date _____

Local Allocation No. _____

Non-Transferable

WPB File No. _____

CERTIFICATE OF TRANSFER
for
NEW COMMERCIAL MOTOR VEHICLE

To:

(Name of Applicant—Transferee)

(Doing Business As)

(Address of Applicant)

Pursuant to Section 1111.1 (d) of General Conservation Order M-100 effective March 9, 1942; Upon presentation of this Certificate of Transfer within thirty (30) days from date thereof, countersigned by you, to a Transferor, the transfer to you by the Transferor is hereby authorized of the vehicle listed below.

Type of Vehicle	Make	G.V.W. of Truck or Truck-Tractor, or Load-Carrying Capacity of Trailer

J. S. KNOWLSON,
Director of Industry Operations.

RECEIPT

Receipt is hereby acknowledged from the Transferor of the vehicle listed above, this _____ day of _____, 194_____

Transferee

TRANSFEROR:

The person from whom the vehicle is acquired by the Transferee must sign here.

Name

Address

Date

(Note: Form PD-321 consists of an Original and a Duplicate copy, the latter marked "Duplicate—Invalid")

These trucks in the rationing pool are getting plenty of fresh air deteriorating in the open awaiting someone with a certificate to place them in service



cember were caught in the freezing order. From here in, it is contended, applications will fall far short of any 50,000-a-month standard.

5. That some consideration be given to the trade in areas where there is no defense work and therefore no Class 1 and 2 applications. In such areas applications in the other classes should be honored or else some plan should be developed to make these trucks available in defense areas. Otherwise the trucks will deteriorate, the dealer will go broke, transportation will be wasted and the purpose of rationing will not be served.

6. That some consideration be given to applicants seeking to acquire trucks caught in the freeze, especially where such trucks are equipped with bodies designed to meet the needs of the applicant but wholly unsuited to the requirements of Class 1 and 2 eligibles. It is suggested that ODT assign a special committee chosen from among its personnel to look into this matter because only physical contact will provide a proper appreciation of it. A week spent in a few of the larger cities would enable the committee to familiarize itself with the problem.

7. That special consideration be

given to the release of trucks with highly specialized bodies intended for users in Class 4. The trade has in mind such jobs as house-to-house units and refrigerated van panel units. If they are not released to users in Class 4, they must stand useless for the duration of the war because they do not fit the needs of Class 1, 2 and 3 eligibles.

8. That if no consideration is to be given applicants in Classes 4 and 5, the classification list should be revised to exclude these classes and thus put an end to the pretense that they are eligible for rationed trucks, conserve the effort expended on such applications and permit the trade to gage its future more accurately.

9. That some control should be exercised over the transfer of new vehicles from the rationing pool by means of the Government Exemption Permit PD 322. It is presumed there has been no control because during the first month these transfers numbered approximately 7000 as against the 4000 transfers accorded civilian applicants. The propriety of such applications should be checked.

Although COMMERCIAL CAR JOURNAL is informed that ODT does not have under consideration any change in the application form, the suggestion that it needs simplification and clarification is supported by independent study. Those who know motor transportation and have studied the application form have difficulty convincing themselves that any applicant can answer Question 10 "completely," as demanded, and completely must mean with proof of the accuracy of the answers if the applicant is not to expose himself to prosecution under terms of the Criminal Code of the United States.

Question 10 asks: "Can the service for which you desire to use this vehicle be performed practicably by more intensive utilization of your present equipment, by pooling equipment with other operators in your area, by leasing equipment, or by some other arrangements? If not, explain why and indicate steps you have taken in this connection."

Two weeks after the forms were out 30,000 applications were received. How many of these were in position to give detailed answers, with proof, to Question 10? In that time were they really able to make a thorough

(TURN TO PAGE 128, PLEASE)



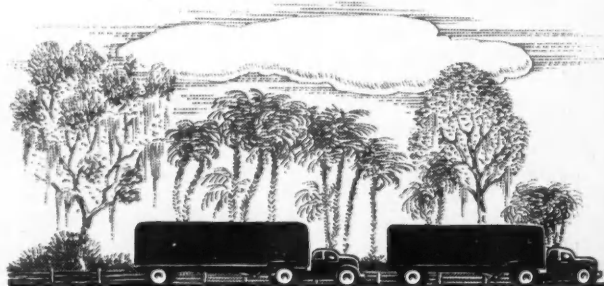
General view showing some typical units in the Mason & Dixon fleet lined up at the home base in Kingsport, Tenn.

MASON & DIXON'S MAINTENANCE FIXIN'S

True southern hospitality is accorded a well-seasoned preventive maintenance set-up promoting efficiency of a fleet famed for "joining the North and South"

by **W. C. MESSER**

Maintenance Superintendent, Mason & Dixon Lines, Inc., Kingsport, Tenn.



W. C. Messer

WE take nothing for granted when it comes to maintenance. You might almost say that our maintenance department consists of a group of pessimists who spend a great deal of their time looking for troubles that might happen and asking the drivers for bad news. But that's our way of finding out what should be done to "keep 'em rolling" for victory.

The Mason and Dixon Lines, Inc.,

operates 402 units at the time this is written. These include 157 tractors, 180 semi-trailers, 45 straight trucks (Pick-Up Units), 14 passenger cars and 6 service trucks.

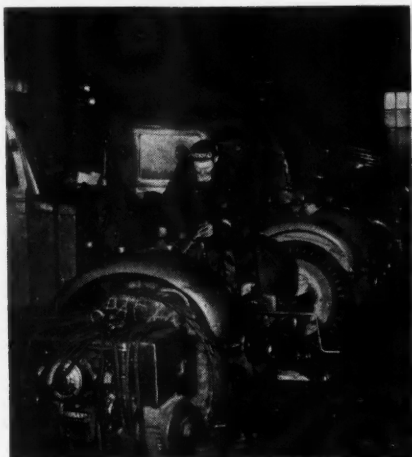
We operate as "common carriers," hauling general commodities. Our over-the-road equipment consists of 2 to 5-ton tractors with 20 to 28 foot semi-trailers, which run about 11,000,000 miles per year over regular routes whose length varies from 20 miles to 952 miles each way.

We have 125 employees in our maintenance and repair departments at 136 Clay Street, Kingsport, Tenn.,

in which city our company headquarters are located, and at maintenance shops in 8 other cities in our territory. Two general foremen, one day and one night, are in charge of our service, maintenance and repair operations. Under these are three maintenance crew foremen, one for each shift of our three-shift day. In addition, there is a machine shop foreman, who covers the unit shop, and a body shop foreman, who also covers the paint shop and steam cleaning department. The maintenance department works three shifts per day; the unit shop, body shop, paint shop and



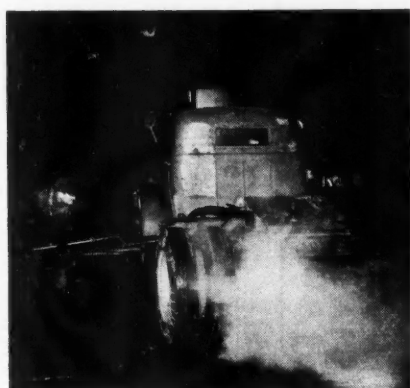
Motor tune-up, using a gas analyzer



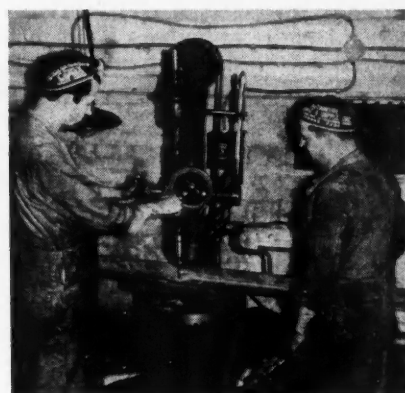
A row of tractors in the repair shop



Checking front ends during inspections



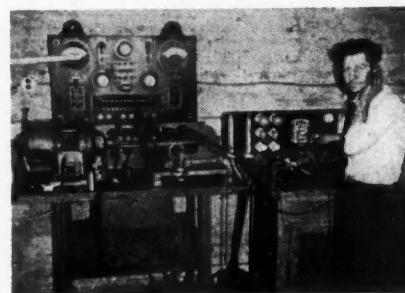
Steam cleaning the chassis is a must



A power drill speeds up maintenance



Shaft throws are turned in the shop



Electrical repair and testing bench

steam cleaning department work two shifts per day, and the machine shop works one or two shifts per day, as necessary.

One thing that we do in the shop may seem like a waste of money, but we don't think so. Where we operate in two or more successive shifts the incoming crew starts work half an hour before the outgoing crew quits. This means that for half an hour we have two shifts working at the same time on the same jobs. Why? Because in this way the outgoing crew has an opportunity to explain to the incoming crew what is

being done, how far the job has progressed, and enables the incoming crew to carry on without wondering what to do next.

When a mechanic wants parts or supplies from the stockroom he fills in a requisition, which must be okayed by the foreman on duty at the time. The mechanic presents the approved requisition at the stockroom and gets what he needs. The stock itself is kept track of carefully. We use perpetual inventory cards for each item and know what we have on hand, what we should have, when to reorder, how much is on back order,

where we buy it, what it cost and where it is stored. Our inventory of supplies and parts averages about \$30,000 and we use an average of one carload of oil and grease per month. Before rationing, our procedure was to sell or trade in our pick-up trucks, but on heavy stuff, such as tractors or big semi-trailers, we tear down two old ones and make up one good unit.

Besides the Kingsport maintenance shop we operate others located in Asheville and High Point, N. C., Atlanta and Dalton, Ga., Chattanooga and Knoxville, Tenn., Strasburg, Va.,

(CONTINUED FROM PAGE 25)



One of M&D's highway inspection cars

But that's where we start. That
(TURN TO PAGE 67, PLEASE)

SPEEDOMETER READING

Return _____

Start _____

Trip Miles _____

DRIVERS _____

MASON & DIXON LINES, INC.

DRIVER'S SERVICE & TIME CHANCE REPORT

Gal. Gas used _____ Qts. Oil used _____

Date _____

Time in _____

Truck No. _____

Tractor No. _____

Trailer No. _____

Driver must check any item needing attention at time trouble is noticed and present this report, with all above requested information, to Service Office immediately upon return from trip.

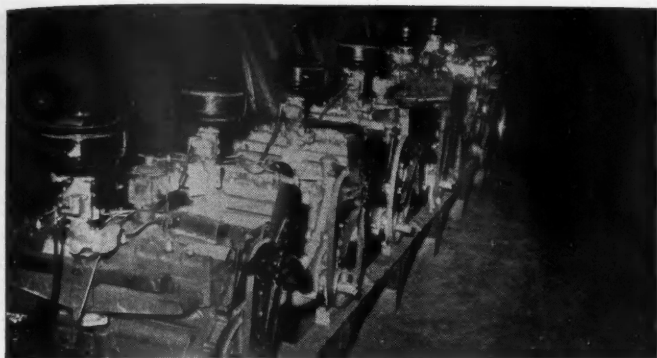
ENGINE	ELECTRICAL	FRONT AXLE
Tune valve power	Generator	Spring Clips
Motor relay	Starter	Spring Weak Brks. R L
Timing gear	Battery	Shackles RF LP
Loose in frame	Ammeter	Spring slipped RF LP
Manifolds	Volts	Out of line
Exhaust pipe	Wiring	REAR AXLE
Muffler		Nuts
Air cleaner	CLUTCH	Too much play
Cylinder head	Grease	Lacks grease
Oil leaks, Ft Rr Side	Slips	Springs R L
	Nuts	Trailer Sp. slipped R. L. Helper
		WHEELS
COOLING SYSTEM	TRANSMISSION	LF RF LR RR
Water pump	Nuts	Trailer L R
Hose connections	Shifting	TIRES
Radiator leaks	Lacks	(See other side)
Radiator bolts	Univ. jts & Drive line	LIGHTS
Fan & Belt		Head
Water	STEERING	Clearance & tall
	Hard or tight	Signal & stop
	Too loose	ACCESSORIES
	Shims	Horn
GASOLINE SYSTEM	Pulls R L	W. S. Wiper
Gas tanks leak R L	BRAKES	Fog Lights
Gasoline leak	Too loose	Bumpers
Fuel pump	Adjust	Chains
Carburetor	Grab	BODY
Dirt in Gas tank R L	Brakes don't hold	Cab doors & windows
Accelerator & choke		Windshield
	LICENSE PLATES OR CARDS	Top
TOOLS:-Report to Service Office	Report to Service office	Tail gate
GREASE AND CHANGE OIL		Shaper
		Fifth wheel

Write any miscellaneous items not listed above in this space.

List any road repairs, giving nature of work done, location and cost in this space.

TIRE CHANGE RECORD									
Where Changed			Date			Where Changed			
Truck No.		Tractor No.	Trailer No.			Truck No.			
Who made change						Who made change			
Speedometer						Speedometer			
FILL IN TIRE NOS. OF TIRES CHANGED									
✓ CHECK WHETHER TADOL, TRACTOR OR TRAILER									
OFF			ON			✓ CHECK WHETHER			
Truck		Tractor	Trailer	Truck		Tractor	Trailer	Truck	
RF				RF				RF	
LF				LF				LF	
LRO				LRO				LRO	
LRI				LRI				LRI	
RRO				RRO				RRO	
RRI				RRI				RRI	
SP				SP				SP	
SP				SP				SP	
CHECK CAUSE FOR REMOVAL									
Blowed			Puncture			Blowed			
Run Flat			Cut			Run Flat			
FILL IN									
Where Changed			Date			Where Changed			
Truck No.		Tractor No.	Trailer No.			Truck No.		Tractor No.	

Fig. 6. The accessory and inspection report is 5x8 in. Note items listed



Line-up of replacement engines ready for immediate use

Trucks get their final "OK" at this checking-out station

ENGINE TEST RECORD	
Code No. _____	Date _____
Installed By _____	
Time Started _____	
Time Idling _____	
Time in 3rd _____	
Time in 4th _____	
Time in O.D. _____	
Speedometer reading in O.D. _____	
VALVE CLEARANCE	
Intake (set at) _____	Exhaust (set at) _____
Valve Clearance Set By _____	
Removed from stand by _____	
Time removed from stand _____	
Gallons Gas Used _____	
Engine removed from Truck No. _____	
Engine Built By _____	
Remarks: _____	

[illegible][illegible]

THE MASON & DIXON LINES INC.

OBSERVATION REPORT

Safety Department, _____
Kingsport, Tennessee. _____

Date _____ 194 _____

The following report is submitted on operation of:

Tractor No. _____ Trailer No. _____ Truck No. _____

Driver _____ Direction _____

Where operation of unit was checked _____

Date _____ 194 _____ Time _____ AM _____ PM _____

Miles Traveled _____ Speed Range _____

OPERATING CONDITIONS

Highway: Smooth _____ Rough _____ Slippery _____ No. Lanes _____

Weather: Rain _____ Snow _____ Fog _____ Clear _____

Vehicle: Lights _____ Alignment _____ Tail Gate _____ Tires _____

OPERATION VIOLATIONS

Failure to Observe STOP sign _____

Failure to Observe Warning Sign _____

Failure to Observe Traffic Signal _____

Failure to Stop or Slow Down at Draw Bridge _____

Failure to Stop or Slow Down at Railroad Crossing _____

Failure to use: Torches _____ Flags _____ Fuses _____

Parking Improperly _____ - Following too Closely _____

Turning Improperly _____ - Hesitating _____

Passing Improperly: Hill _____ Curve _____ Straight Away _____

Other Violations: _____

Suggestions or Comments: _____

Business

THE MASON & DIXON LINES, Inc.

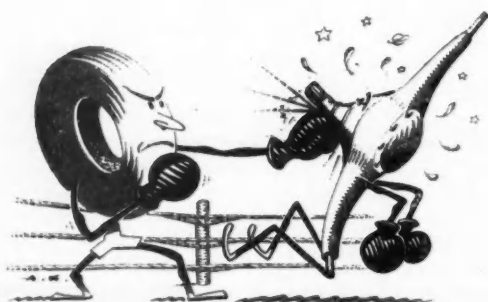
ACCESSORY INSPECTION REPORT

CHECK IF		TRIP								
W B		MILE								
AGG		AGE								
STATION - TIME - DATE				SPEEDOMETER		TRUCK		TRACTOR		
START				RETURN		DESTINATION				
<p>The following items have been checked prior to leaving terminal and are O. K. and in satisfactory condition at time of departure. Driver will be responsible for their care while on trip and is authorized that U. S. C. Inspectors may examine them at any location prior to leaving return.</p>										
LICENSE PLATES & CARDS					LIST INS. ADJUSTERS					
HEADLIGHTS					ACCIDENT REPORT CARDS					
MARKER LIGHTS					DRIVER'S SERV. REPORT					
REFLECTORS					FOG LIGHTS					
TAIL OR STOP LIGHT					R. FT. FENDER					
HORN					L. FT. FENDER					
W. S. WIPER					FT. BUMPER					
REAR VIEW MIRROR					RADIATOR					
SPEEDOMETER					WINDSHIELD					
STEERING MECHANISM					CAB BODY					
BRAKES (FOOT)					L. DOOR GLASS					
BRAKES (HAND)					R. DOOR GLASS					
AIR CLEANER					GAS TANK CAPS					
FIRE EXTINGUISHER					LANDING GEAR					
SPARE BULBS & FUSES					SLEEPER ROOMS					
SPART PTS. & PLUGS					COIL ROY					
3 POT FLARES & STD.					FRONT OF BODY					
3 RED FLAGS					LEFT SIDE OF BODY					
3 FUSES					TAIL GATE, CHAIN & SEALS					
SPARE AXLE SHAFT					RT. SIDE OF BODY					
JACK & WRENCH					LOCK AND KEYS					
TIRE CHAINS, IF NECESSARY					ROOF					
MISCELLANEOUS					SLEEPER					
QUARTS OIL					BREYET					
TIRES										
<div style="display: flex; justify-content: space-between;"> Left, Dash, Dr. Acc. Chargeable To DRIVER </div>										
TRUCK		Start	Return	W. F.	L. P.	L. A. G.	L. R. I.	M. L. C.	M. T. I.	DRIVER
TRACTOR		Start	Return							
TRAILER		Start	Return							
LEAVING										
Signed By Driver					Signed By Driver					
Signed By Driver					Signed By Driver					
Inspector					Inspector					

Fig. 6

HOW TIRES AFFECT AXLES

Axles take a surprising beating which subjects them to premature failure if tires are misused or badly maintained



by **LAWRENCE W. FISCHER**
Executive Engineer, Timken-Detroit Axle Co.



L. W. Fischer

THE evils of improper selection, use and maintenance of truck tires have been well pictured for fleet operators by tire manufacturers. Naturally, the evils were pointed out to show their effect on tires only. However, these evils have their effect on truck axles and there is no time like the present to tell how tires affect axles.

The pneumatic tire is a flexible load-cushioning structure between the road and the wheel of the vehicle.

Therefore, each tire must be designed and built to carry a certain load under specified operating conditions with maximum mileage or life.

To have a better understanding of the pneumatic tire, we should know something about its behavior under various loads and inflation pressures. This tire behavior is shown graphically by three diagrams, followed by some exact measurements.

The diagram in Fig. 1 indicates that a properly inflated tire mounted on a wheel not resting on the road, is round and has a definite diameter—called the "overall diameter."

In Fig. 2, the tire is resting on a

flat surface and is carrying its rated load. Note that because of the inherent flexibility of the tire and because of the fact that air is compressible, the tire assumes a different shape at the ground contact. The dimension from the center of the wheel to the ground is less than one-half the overall diameter. This dimension is the "static loaded radius."

Fig. 3 presents a diagram showing how the tire cross-section is affected by the application of loads. The dotted lines show the tire contour when the tire is properly inflated but under no load as shown in Fig. 1. The solid black section shows the

FIG. 1. Sketch of a pneumatic tire off ground—without load

FIG. 2. Sketch of a pneumatic tire on ground—carrying load

FIG. 3. Cross-section through pneumatic tire showing deflection of tire under load. Dotted lines show tire contour when tire is inflated under no load

FIG. 4. Typical bearing arrangement of rear axle wheel bearing mounting when using dual tires

FIG. 5. Showing wheel bearing distribution. Upper diagram indicates normal load. Middle diagram shows load distribution if all load is on outer tire only. Lower sketch shows load distribution with load on inner tire

FIG. 6. Showing exaggerated application of mismatched tires in dual mounting (see next sketch)

FIG. 7. This shows dual tires on a highly crowned highway

FIG. 8. Showing how duals ride on a highly concaved highway

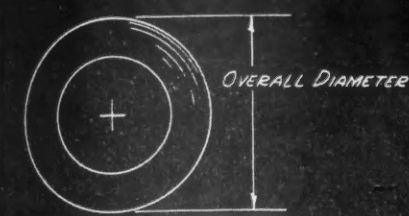


FIG. 1

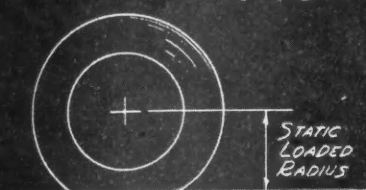


FIG. 2

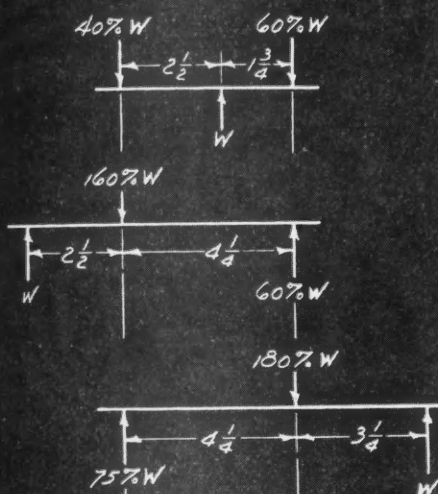


FIG. 5

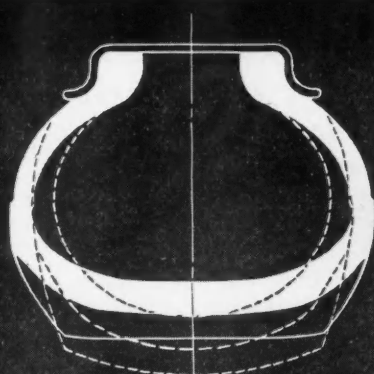


FIG. 3

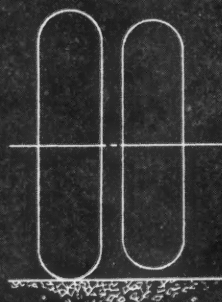


FIG. 6

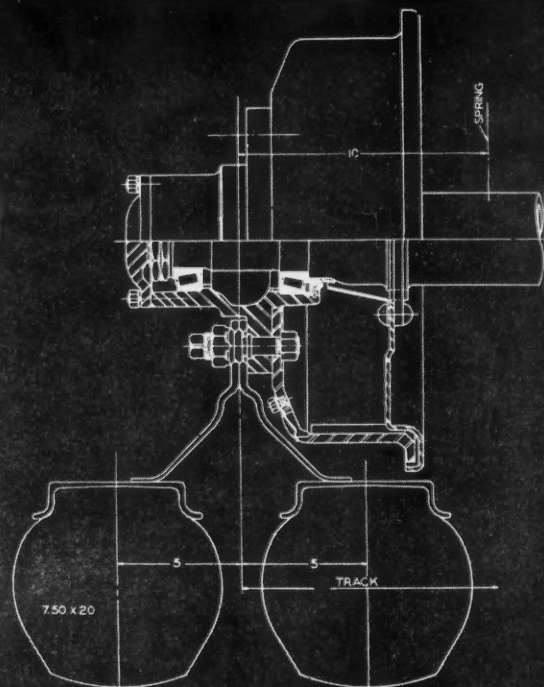


FIG. 4

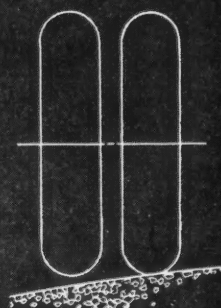


FIG. 7

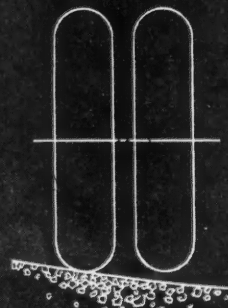


FIG. 8

contour of the tire under rated load.

It is plainly evident that the static loaded radius may be changed by increasing or decreasing the load on the tire or by increasing or decreasing the inflation pressure and Charts I and II give some accurate figures.

Chart I shows the effect of varying loads on the static loaded radius of a 7.50/20 8-ply military tread tire with the inflation pressure kept constant.

Chart II shows the effect of varying tire inflation pressures on the static loaded radius of the same tire (Chart I) with tire load kept constant.

Please note the number of variations in the number of revolutions per

CHART I

Pounds Load	Pounds Inflation	Static Loaded Radius	Rev. Per Mile
1750	55	17.31	577
(2250)	55	17.16	(582)
2750	55	16.96	589
3250	55	16.80	594

Showing effect of varying loads with constant inflation—7.50/20 8-ply military tire.

CHART II

Pounds Load	Pounds Inflation	Static Loaded Radius	Rev. Per Mile
2250	40	16.93	590
2250	45	17.02	586
(2250)	55	17.16	(582)
2250	65	17.26	579

Showing effect of varying inflation pressures with constant load—7.50/20 8-plys.

mile made by the tire under the different conditions of load and inflation, as we will frequently refer to it.

Dimensions vary somewhat between tires of different makes although the tire manufacturers have

an association which establishes certain basic standards.

Therefore, the data given in Charts I and II were obtained from one of the large tire manufacturers and may be considered typical. The dimen-

HOW TIRES AFFECT AXLES

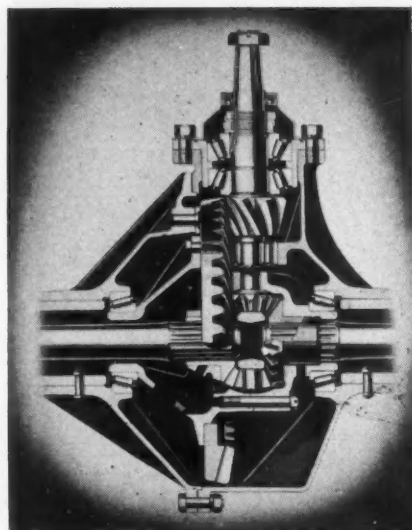


Fig. 10. Showing arrangement of final drive gears and motor truck differential in Timken bevel gear rear axle

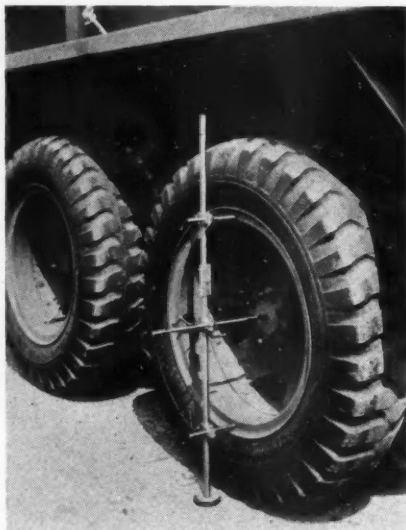
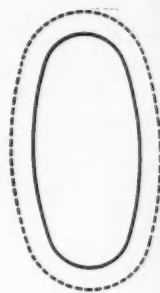


Fig. 11. Demonstrating the use of a tire radius gauge to determine unit-tire load for maximum tire mileage

Fig. 9. Typical area of contact of a pneumatic tire on ground. Solid line indicates area of contact with correct inflation and load. Dotted line indicates area of contact with overload or under-inflation or both. Design and condition of tread will determine actual contact



sions given are for new tires and in actual practice we will therefore have to take into consideration the variations in the static loaded radius due to various degrees of tire wear.

It so happens that the measurements of the 7.50/20 8-ply military tread tires were readily available and are therefore given as an example. The variations in static loaded radius and revolutions per mile on other sizes of tires will naturally be different and the dimensions given in Charts I and II are given only to indicate that certain variations must take place.

With an understanding of the behavior of a pneumatic tire, we are now ready to analyze the relation of tires to axles. There are several ways in which tires affect axles and will be considered under the following headings:

1. Dual tire mounting on the rear wheels.
2. Relation of tires on the rear axle wheels.
3. Single tires on front axles.
4. Relation of tires on two or more axles connected together.

Dual Tire Mounting on a Rear Wheel

In order to get sufficient load carrying capacity, the usual practice is to mount two tires side by side—either

on the same wheel or by using two disc wheels attached to one hub. A typical example of wheel bearing mounting is shown in Fig. 4. Each wheel bearing must have the capacity to carry its share of the total load at the wheel. In this particular design the inner wheel bearing carries approximately 60 per cent and the outer wheel bearing carries approximately 40 per cent of the load. Assuming a flat surface, when the inner tire is completely deflated (punctured, for example) then the outer tire carries all the load. This creates a load on the outer bearing equal to four times its rated capacity.

Likewise, if the outer tire is completely deflated, then the inner tire carries all of the load and the inner bearing is loaded to about three times its rated capacity. For those readers who question these statements, the load diagrams in Fig. 5 show how we arrive at the load distribution on the wheel bearings.

Having established these extreme conditions of bearing loads, it is easy to realize what can happen to bearing loads with any intermediate unequal distribution of load on the tires. The 0-100 per cent distribution of load between dual tires should not occur for a long period of time but any other distribution of load may exist for thousands of miles with possible

injury to the rear wheel bearings.

Referring again to Fig. 4, the dimension from the edge of the spring to the center of the dual tires is 10 in. The bending moment in inch pounds in the axle housing at the spring mounting is the load $W \times 10$. If the outer tire only is carrying the load, then the bending moment becomes $W \times 15$, or 50 per cent greater than normal.

The result is increased deflection of the axle housing and in case of a shock load, such as dropping off a high curb, a permanent set in the axle housing may occur.

As noted previously, a difference in the loaded radius may be caused by improper inflation or difference in tire diameters due to wear. Mismatched tires have no place on a dual mounting, as indicated in Fig. 6.

The effect on tire wear, when one tire wants to make 590 revolutions per mile while the attached mating tire wants to make 580 revolutions per mile, is something to think about because there must occur a slippage of rubber equivalent to sliding one tire approximately 92 ft. per mile ($10 \times \text{loaded radius} \div 12 \times 2 \times 3.14$).

The road contour also contributes to change in load distribution between dual tires and must be taken into consideration. Fig. 7 shows the effect of a high crown road (exaggerated) and likewise Fig. 8 shows the effect of an extremely concave surface.

Relation of Tires on Rear Axle Wheels

Rear axles usually embody the necessary mechanism to deliver power from the propeller shaft to the wheels. This mechanism consists of a final drive gear set, an axle shaft for each (TURN TO PAGE 46, PLEASE)



SHOP HINTS

FROM FLEET SHOPS

Now is the time for all good citizens to come to the aid of their country by buying United States Victory stamps and bonds, and here is a chance to get some easy money to invest in our Democracy. If you have an idea that simplifies shop operation, send this idea in to the editor. Commercial Car Journal will pay \$5 for each Shop Hint accepted. Send as many as you have with a photo or rough sketch for each. Explain the idea in your own words. CCJ will polish them up.

1.

Salvaging Bulbs

by Charles S. Crawford
Atlantic Refining Co.,
Williamsport, Pa.

WHEN one filament in a double contact bulb burns out, the use of a little solder will soon turn it into a single contact bulb, suitable for use in turn signals, dome lights, stop lights, or wherever single contact bulbs are needed.

With a small pointed iron puddle the contacts across the center, adding a little solder if necessary, then file down to a smooth rounded surface. This connects the filaments and furnishes a single contact. An old piece of water hose split lengthwise at one end can be used as a very efficient holder for the bulb while working on the contacts.

2.

Repairing Distributor Cap

by Alva C. Stark
Alfred M. Lewis, Inc., Riverside, Cal.

HERE is a very simple method for repairing a cracked distributor head cap. A crack in the cap extending from the center tower to any of the outside towers affords a path for a shorting spark to travel.

This is a common type of cap failure and in the past has meant discarding many caps. Using as large a drill as the clearance between the towers will allow, drill a hole over the crack and through the cap, or to the depth of the crack, if the crack does not extend through the thickness of the cap. This will have the effect of cutting the crack in two. A plug made from cork, rubber, sealing wax, etc., may then be used to fill the hole.

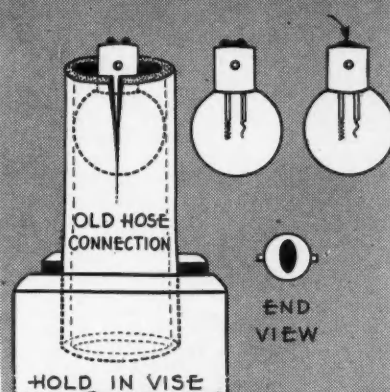
3.

Bearing Pressure Tester

by Lew Cripps
Philadelphia, Pa.

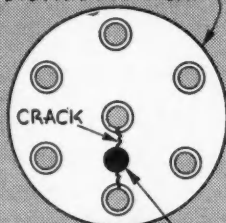
HERE is a very simple but workable device for pressure test of bearings. Using an old oil pump insert the drive shaft into the chuck of an electric drill, and to the body of the pump clamp or weld a bar long enough to rest against the handle of the drill. Attach a line from the pump outlet to the main oil line in the engine. Now with the pump submerged in a bucket of oil and the electric drill put into operation you have a very efficient oil pump and bearing oil pressure tester. The bar from the pump to the drill handle prevents the pump from rotating when the drill is operated.

FILE THIN AROUND EDGES
—LEAVE CENTER ROUNDED

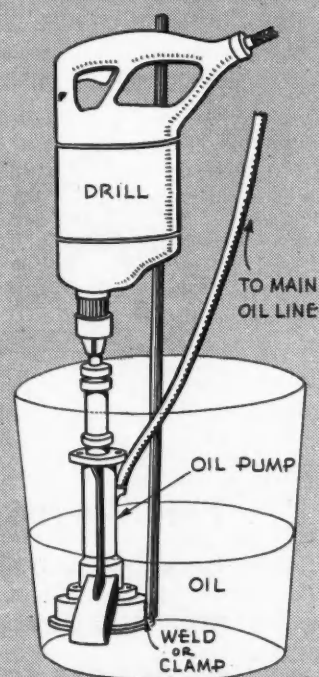


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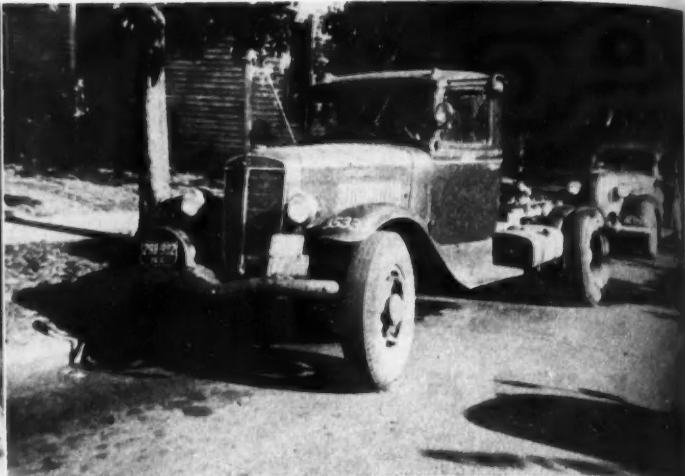
DISTRIBUTOR CAP



②

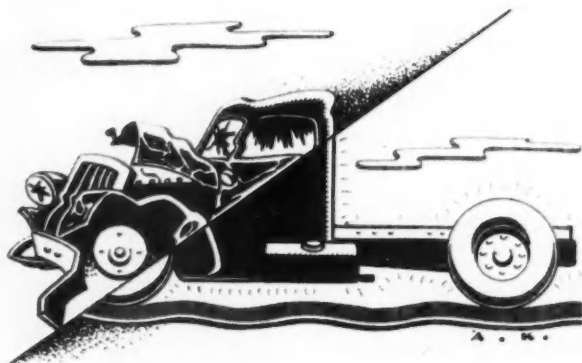


③



As proof of the fact that salvaging pays, consider the cost of rebuilding this damaged vehicle which was far less than the cost of its replacement. After repairs the tractor was as good as new. See above photograph of rebuilt job

SAVE BY SALVAGE



**Fort Wayne, Ind. fleetmen reveal
how they rebuild equipment and
salvage parts, previously discarded
as useless, to prolong life of trucks**

Back to Rebuilding

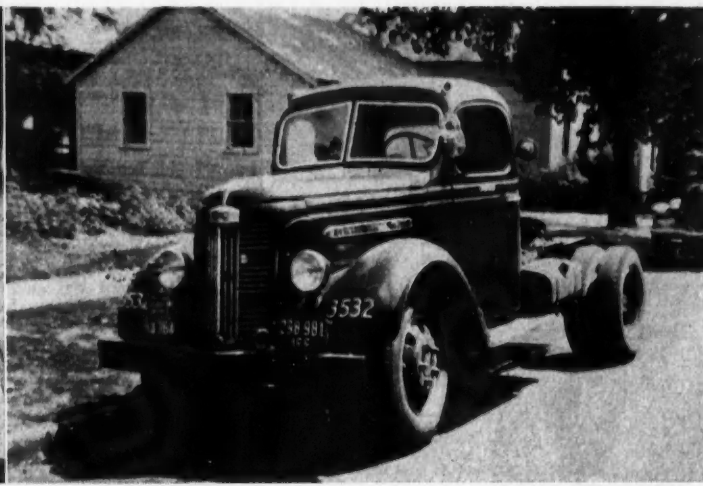
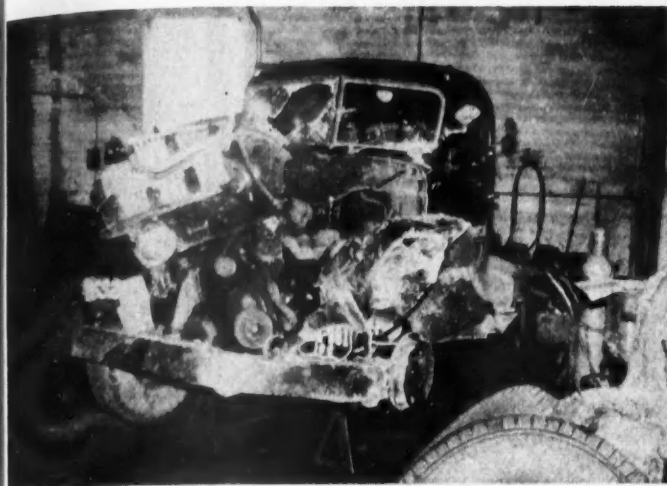
by A. J. Cobb

Reliable Oil Company

IN this critical emergency we believe that no service is too small and no damage is too great to warrant our not undertaking repairs if it will extend the life of the equipment. An example of this was an accident that wrecked one of our trucks during a fog. The wreck and the rebuilt job is shown in the above photos. The cost of rebuilding was as follows:

90 hours labor @ \$1.00	\$90.00
Replacement parts, fenders, radiator grilles, water pump assembly, fan headlights, one wheel, running board, windshield, one tire, welding spring leaves and hood (list \$400.00)	Net \$300.00
	<hr/> \$390.00
Local outside per hour rate at \$2.50 per hour (90 hours)	\$225.00
List on new parts	400.00
	<hr/> \$625.00
Total savings (\$625 less \$390)	\$235.00

Another job (shown on opposite page) damaged by collision was repaired in the shop with 35 hours labor and \$200.00 net cost for parts. The shop saved \$52.00 on labor and \$50.00 on parts. One other accidental wreck (these three representing our total major accidents to equipment) was reconditioned with 90 hours labor and a cost of \$533.00 for new cab, straightening frame and



This wreck looks like a hopeless mess and ordinarily it would be discarded for a new job but when mechanics got through salvaging the parts and rebuilding the vehicle, they turned out the above model far below the cost of a new tractor

front axle, welding broken spring leaves, replacing main leaves, new radiator, new hood, welding one safety gas tank, repairing one fender, replacing one new wheel and rim, left front brake and spindle, one running board, one rear view mirror, gear shift lever and complete steering gear and straightening frame. A saving of \$133.00 was made on parts and \$135.00 on labor.

We have one 1937 model truck in the shop for a complete overhaul, speedometer reading 532,827 miles. It still has the original transmission and motor block. Its motor has had new sleeves and pistons. We recently installed five spider gears in the differential. Ordinarily we would trade this job in, but as a matter of salvaging many vital parts and driving this unit to its maximum potential mileage without sacrificing operating efficiency, we will overhaul it from bumper to bumper.

We have increased the frequency of check-ups on chassis and have established daily tire checks, brake inspections and motor tune-ups since the war began. We rebuild batteries if it is decided that the rebuilt battery will warrant a 90-day guarantee. The additional service we receive from a battery for the small cost of rebuilding is well worth the practice. For instance, a one-cell replacement cost us \$2.50. This saves two-thirds of the battery elements and affords up to six months additional service.

Salvaging Old Equipment by Everett Metcalf Maintenance Manager, Kuhner Packing Co.

IN the face of rationing, we have decided to rebuild our old trucks which ordinarily would be junked. An example of this was a 1935 vehicle that had run 500,000 miles. It was worth about \$30 and normally would have been turned in for a new job, but we put it through for an overhaul from bumper to bumper, including an insulated body built in our own shop.

The following figures, combined with the assured potential renewed service of 200,000 miles are surprisingly significant and prove that in the past we have not even scratched the surface of salvaging possibilities.

Overhaul motor, labor and parts	\$75.00
Rebush front end and spindle bushings	12.00
Reline brakes and true-up drums	25.00
Overhaul steering system	15.00
Overhauling rear end	16.00
Cab repair, painting, glass, etc.	32.00
Fish plating frame with 3/8-in. boiler plate	25.00
<hr/>	
Total reconditioning cost motor and chassis	\$200.00
New body, shop built	400.00
<hr/>	
Total	\$600.00

The motor overhauling consisted of reboring cylinders, installing over-size pistons, overhauling water system, new connecting rod bearings and

wrist pins. A rebuilt motor, if available, lists at \$87.50. A new 1½-ton truck and cab, without body, if available, is \$875.00. A complete insulated body for refrigeration would, if purchased on the open market, cost \$75.00 per lineal foot, or \$900.00—entire new job \$1,775.00. Based on previous maintenance here in our shop we would figure another 500,000 miles on a new truck.

We expect this overhaul job to give us 200,000 miles on which we have a labor and investment cost of only \$600.00, but in addition we have a new body which can be transferred to another chassis when the rebuilt job is finally worn out.

We considered it essential to fish-plate the frame to reinforce it for carrying increased loads. To lengthen the frame we cut the necessary length from steel channel iron, using acetylene welder to cut the steel. We electric-drilled four holes for 3/8-in. bolts to join members flush with balance of frame.

After bolting extensions firmly to frame with an overlap of 14 in., the top sections were acetylene welded, making an integral construction. This welding process requires about 30 minutes for the job but we get a flush surface on which to mount the body. Our arc welder would be faster, but for this particular job we prefer the acetylene process for a smoother finish. Welding the top
(TURN TO PAGE 60, PLEASE)



BYERS GOES ALL OUT



L. H. Lynch

TIRE studies which we made two years ago convinced us that factors causing excessive tire wear are the same that shorten the life of all other equipment. This conclusion led us to adopt a policy of increasing tire efficiency in an effort to lower fleet maintenance costs. We planned this policy and carried it through every branch of our operation—shop, drivers, tire buying practice, and highway station stops. Today this plan has reduced road failures 50 per cent for an average of less than one failure a month.

Before we began our plan, tires were the tire company's worry. We bought tires on a guarantee basis and had them recapped the same way. If something went wrong with a tire it was sent back. We checked mileage only to make sure we were get-

ting our money's worth. Today we check tires as a barometer on the operation of our complete unit and to make sure we are getting all the miles we know we should.

The backbone of the entire plan is preventive maintenance. We attempt to locate tire trouble before it becomes serious enough to cause road failure or ruin the tire and tube. We do this by checking tires along the route, in our shop, and according to schedule as prescribed by our tire record system.

Our initial goal was to lower tire costs to a mill-a-mile per tire (based on 1940-41 tire prices) which point we have now achieved. The approximate transportation average in our area for the period was 1½ mills per mile. We believe a further 10 per cent gain in efficiency is still possible. Translated into tire mileage we expect our tires, which do not meet with accidents, to serve 125,000 highway miles and an additional 25,000 miles of city and short-haul work.

Our preventive maintenance begins on the highway. One night each week I follow our trucks, checking for road sway and the number of times the right rear trailer tire rides the curb. Initial checks showed this tire carried the trailer weight more than 10 per cent of the time. By seeking driver co-operation we have lowered this to about 6 per cent.

Our operation is large enough to make these figures important. We are a general transportation company hauling merchandise that is bulky but light in weight. Payloads average 18,000 to 20,000 lbs. All equipment is tired with 9.00 x 20s, with a few oversize tires with which we are experimenting.

Our equipment includes 21 tractors, 22 semi-trailers and 15 trucks. All tractors are gasoline powered. Trailers are stainless steel and aluminum, in 22 to 28-ft. lengths. City delivery trucks are ½-ton jobs. We also lease units when rush of business demands.

TIRE MILEAGE RECORD 161											
SIZE & TYPE 900 X 20 B				BRAND No. 27							
ACCOUNT				SERIAL No. 2157981							
Coach or Cab No.	DATE		R.F.	L.F.	MILEAGE				Total Mileage	REMARKS	
	On	Off			R.R.	R.R. to	L.R.	L.R. to			
T19	1-14-39	12-7-40	✓						121570		
				✓					200-675		
									79105	Recap	
T47	2-1-41	10-16-41							17641		
									68124		
									179588	Match	
T16	11-17-41										

Post repair expense under "Remarks" to prevent duplicate payment and check mileage after repair.

Date 1/15/41

Tire Make MOUNT

Tire Serial R

Tire Size 8-11-K

Tire Brand No. 900X20

Truck No. 360

Trailer No. 42

Mileage 57522

Tire Make DISMOUNT

Tire Serial B

Tire Size 8-12-M

Tire Brand No. 900X20

Disposition: 410

Recap

Borby
(Mechanic)

ON TIRES

More inspections, frequent stops, 20-minute cooling periods, systematic rotation and matching add miles to Byers' tires and longer life to trucks

by L. H. LYNCH

General Manager, Byers Transportation Co., Kansas City, Mo.

This equipment operates from our headquarters in Kansas City, Mo., over two routes. These are the Kansas City-St. Louis round trip run of 500 miles and the Kansas City-St. Joseph, Mo., round trip run of 125 miles. Our units pile up a yearly total of 1,250,000 miles.

Our first step was to seek the causes of tire failure and these we

found to be: Large pieces of metal which cut open the casings; under-inflation, which in the case of dual mounting throws the weight of the load from one tire to its mate, thus causing both to blow out; older tires mounted in trouble spots such as tractor drive wheels and trailer outside rear wheels, and overinflation built up in tires through long hard

TIRE CHANGE NOTICE

Date 1/10 1942

Car, Truck, Tractor 42

Trailer Number

Place Changed Marshall Jct.

Meter Reading 67410

Wheel Position L R

Serial—Brand Number of Tire Removed 422

Serial—Brand Number of Tire Applied 410

Cause of Removal Cut

Disposition of Tire Shop

Cost \$

Baker Driver

2105-1538-4-40-25320-101

Byers' tire mileage record, serial record and tire change notice forms are shown above. The original mileage record is 8x5 in. The serial record is 4x7 in. The change notice is 3x5 in. Photo is of a typical Byers' unit

BYERS GOES ALL OUT ON TIRES

(CONTINUED FROM PAGE 35)

driving without time out to permit tire cooling.

We find that inflation is the most important part of a tire's care and this has led to our policy of adapting air pressure to payloads. If a payload leaving our dock weighs 18,000 lbs., the tires carry 85 pounds, if the load is 19,000 lb. tires carry 87½ lbs., and if 20,000 the tires are brought up to 90 lbs. Outside weather is never a determining factor in the pressure we put in our tires, nor are road conditions because in our case we haven't found them important.

Actually, the king-pin of our new plan is the driver. From the programs of other firms we considered both the "Fine" and "Co-op" driver plans and found that the "Co-op" plan was much more effective. In this system the driver works with you from a standpoint of personal pride in his record and his equipment, which we consider much more satisfactory than incurring his ill will by penalizing him for coming in without valve caps, with low tires or other infractions of the planned schedule.

We gain the driver's cooperation by giving him his own outfit as we purchase new units, on which he stays from then on. Next he is given a permanent route so that he can learn every stop, heavy traffic area, bad curve and other road hazard and thus keep his unit rolling smoothly without need of tire-wearing stops.

Further driver cooperation is secured through the posting of all letters concerning drivers on our bulletin board. These may amount to as many as five a week and the majority of them are from our insurance company and concern their observation of our drivers on the highway. Usually they are about speed, the way the driver handled the unit, and road courtesy. Once a driver's courtesy on the road got this firm a good customer and the drivers have not forgotten it.

In our opinion, the best time to talk driver-cooperation is at check-stops along the road. Drivers are spoken to individually. Usually they have something they want to get off

The image shows two overlapping forms from Byers Transportation Co. The left form is the "DRIVER'S TRIP REPORT" and the right form is the "CHECK STATION REPORT".

DRIVER'S TRIP REPORT (left form):

- Header: DRIVER'S TRIP REPORT, Equipment Identification
- Fields: Date, Truck No., Trailer No., Mileage, REPAIRS OR ADJUSTMENTS MADE AT END OF TRIP (with instructions to use reverse side if necessary and to itemize and include in log).
- Table: A table with 10 columns for various vehicle components: Brakes-Service, Brakes-Hand, Steering, Tires & Wheels, Lights, Reflectors, Sealing of Load, FMS Wheel, Trailer Connection, Safety Choke, Electrical Connections, Brake Connections, Windshield Wiper, Horn, Cooling System, Leds, Fan Belt, Fuel System Leds, Tires, Hops, etc., Grease Bells and Pans, Fire Extinguisher, Rear View Mirror, Color of Body, Engines, Choke, Drive Line, Transmission, Exhaust, Grease, Sparewheel or Substitutes, Up-Keys, Battery.

CHECK STATION REPORT (right form):

- Header: BYERS TRANSPORTATION CO.
- Fields: Date, Driver, To No., To, From, Out, In, Return, Station, Location, Arrive, Leave.
- Table: A table with 4 columns for station locations: St. Louis, Westerville, Marshall Junction, Kingdom City.
- Table: A table with 4 columns for tire inspection results: Front, Rear, Left, Right, with sub-columns for Pressure, Tread, and other details.

Driver's trip report form shown above left measures 4x9 in. and the check station report form measures 6x8 in. Note tire check section on this form

their chests during night runs, so one night a week I set up office in a check station and we talk over our mutual problems when they come in. I usually go out about 8 p. m. when I have to make a trip to one of our other stations, and stay out until some time between 12 and 4 a. m.

In these talks we discuss speed and its effect on tire wear; we discuss such facts told to us by our tire company as that at 40 miles per hour a tire gets 20 per cent more than its minimum possible wear. We seldom exceed 40 but with drivers knowing the road, we believe they can roll evenly and smoothly between 30 and 40 at about a minimum of tire and fuel expense.

Our once-a-month Driver's Safety Meeting also builds their interest in our program. Held from 9 to 10 a. m. on the third Sunday of each month. These meetings take up driver's complaints and discussions of our program. Often an expert in some line, such as tires, will speak. To create more interest in safety and to gain the best attendance, we offer prizes of \$5.00, \$3.00 and \$2.00. Any driver who has not had an accident during the past month is eligible in the prize

drawings. The meeting is held in our general office and the Drivers Union does not object to the meetings except that we cannot make attendance compulsory. The drivers also have their own safety committee.

On the road, drivers check their own tires for air pressure. They check valve caps for we have found that uncapped valves take in grit and water which rots the tube and causes valve leakage. Leaks of this sort force the tire mounted with the soft unit to carry excessive weight thus building up additional heat pressure and finally blowing out, throwing all the weight on the soft tire which then blows out too.

If, when a driver comes into a check station, he finds that one of his tires has lost as much as 5 pounds of air pressure, he immediately checks for the leak and has the tire repaired there. If he finds that the tire has built up five or more pounds of pressure, he feels the brake drum to see if the heat has come from there and checks the other tires to find if they are soft and throwing additional weight on this unit. Usually one of these two factors is the cause and is

(TURN TO PAGE 118, PLEASE)



Gavin W. Laurie

THE apparent goal of ambitious private operators who are conscious of the profit possibilities in their operation, is low unit delivery cost.

The spread between manufacturer's cost and the market selling price, embodies warehousing, selling and delivery expense.

Warehousing and selling expense per unit is generally low, except with slow moving products and if volume remains relatively constant, these items are fixed, whereas delivery expense is variable and dependent upon rigid supervision for control.

Private carrier operation might well include bulk or freight hauling in addition to delivery to consumer outlets. In the bulk haul or freight aspect of private carrier operation, large units may be employed to deliver from main warehouse points to smaller warehouse points, at a cost which will net a profit compared to contract hauler rates. This profit or savings over the contract rate should be sufficient to establish a 20 per cent return on the investment in the units necessary to do the job. From a wealth of experience 20 per cent return is considered safe.

The largest possible transportation unit consistent with state and/or municipal limitations on weight, size and volume should be selected. Topography of operating territory, type of goods to be hauled and truck design are other items necessary for consideration. These bulk or restock units should be operated "around the clock" or 24-hours per day on a definitely scheduled basis. Loading, unloading and mileage factors should be determined and built into the schedules of these deliveries. It might be possible in many instances to utilize a large unit of the bulk type for delivery to consumers during the day and augment this activity by bulk service work at night. This alternative must be determined by actual study of all items of expense.

In the structure of most private

*Presented at the annual meeting of the National Council of Private Motor Truck Owners, Inc., Washington, D. C.

FIGURING OPERATING EFFICIENCY

A review of some of the factors that should be considered when planning for efficient, intensive fleet operation

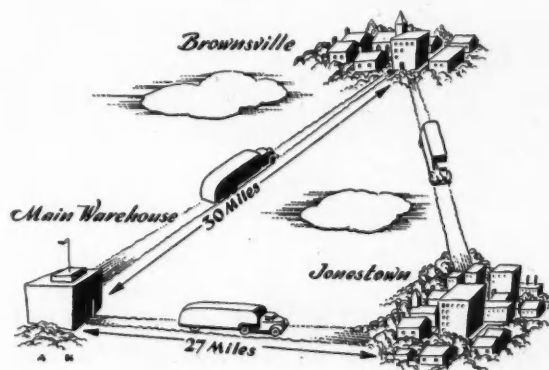


FIG. 1. The economic delivery range between cities is determined by locating at what point out from one warehouse the unit transportation cost equals the unit freight cost of the other. See article for explanation

by GAVIN W. LAURIE*

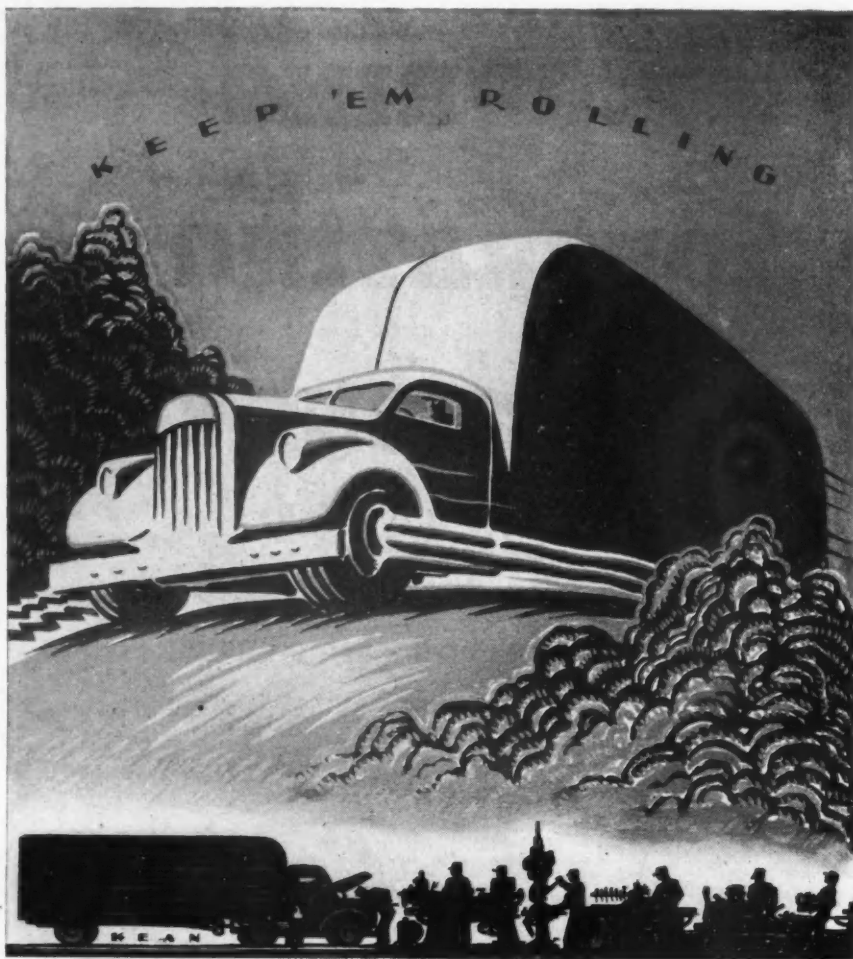
Manager, Automotive Transportation, Atlantic Refining Co.

carrier operations the bulk delivery on long range operation is unjustified and profitless compared to contract or common carrier rates, established through return load operation. Private carriers for the most part are concerned with direct deliveries to the ultimate consumer or dealer from well established warehouse centers. These warehouse points should be

situated nearest the center of each volume area.

Bulk deliveries to stock warehouses whether accomplished by means of the private carriers units or by contract hauler equipment is important, and should be given careful study. Our subject, however, should be chiefly confined to trade or consumer

(TURN TO PAGE 77, PLEASE)



MAINTENANCE PLANS OF ODT

Issuance of booklets and directives on maintenance control, repair procedure, intensified use of equipment and safety figure in maintenance program of ODT

by **WILLIAM J. CUMMING**

Chief, Vehicle Maintenance Section, Division of Motor Transport, Office of Defense Transportation



W. J. Cumming

THE simple idea that the practice of preventive maintenance upon automotive vehicles contributes materially to safer operation of those vehicles,

has been voiced by many men in motor transportation circles.

The program of the Maintenance Section of ODT recognizes this fact to the fullest extent. The agenda of the Maintenance Section program are premised on the belief that a substantial raising in the level of efficiency of maintenance will:

First, materially decrease the necessity for production of new vehicles and parts, thereby diverting equivalent labor and materials into other war effort channels.

Second, increase the availability of vehicles for service on the highways, thereby increasing the work factor per vehicle.

Third, expedite the hauling of goods and performance of services through reduction in the number of road failures.

Fourth, lighten the burden of expense to owners.

Fifth, decrease the accident rate.

The first item of the ODT Maintenance Section's agenda covers publicity releases on maintenance and repair procedures, reclaiming, rebuilding and rehabilitation processes, releases showing the urgency of the maintenance situation with regard to trucks and their mechanical units, releases on safety, mechanic and driver training, and appeals to that class of older mechanics who have retired or sought less strenuous work to rejoin the active ranks of automotive maintenance as instructors or gang leaders. All types of releases pertaining to the operation and maintenance of automotive vehicles will eventually emanate from this office.

The second item covers the issuance of a maintenance booklet entitled, "America's Trucks, Keep 'Em Rolling," which will be sent to owners of trucks, buses and repair agencies.

The booklet contains an appeal to two and one-half million truck owners and repair men to do their part
(TURN TO PAGE 84, PLEASE)



We KNOW HOW THEY FELT!



Those men who earned the first Navy E, back in 1906, must have been the proudest crew of tars in the fleet. We know, for we feel the same bursting pride today. The blue Navy burgee now flying from our flagstaff sends a special thrill through every man in our plant. We're proud to be Americans.

The Navy E is not lightly given, nor lightly received. It means more than Excellence. It stands for a good job well done, for teamwork better than the best . . . and its award to any civilian plant should double and redouble fighting spirit. From now until final Victory dawns, we pledge every effort to help *Keep America Rolling*.



Exide
HEAVY-DUTY
TRUCK BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

The World's Largest Manufacturers of Storage Batteries for Every Purpose

Exide Batteries of Canada, Limited, Toronto



GET IN THE SCRAP!

WPB's Salvage Section urges fleets to collect and sell unreclaimable scrap to help build a much-needed stockpile



L. C. Greenebaum

appealing to the fleet operators of America to immediately sell all scrap materials and to dispose of all unneeded machines, equipment and parts through regular trade channels

APPEALING to the fleet operators of America to immediately sell all scrap materials and to dispose of all unneeded machines, equipment and parts through regular trade channels

in order to overcome the 20 per cent deficit in scrap metals needed for the war effort, the War Production Board's Industrial Salvage Section has set up a Transportation Division to enlist every truck, bus and taxicab operator's support.

Practical transportation executives have been chosen to draft the plan and carry it into execution without

disrupting Transportation's regular service in the war effort. The Salvage Director of the Transportation Industry is Leon C. Greenebaum, president of Metropolitan Distributors, Inc., New York City, operator of over 1700 vehicles in the truck leasing field. Mr. Greenebaum's office is with the War Production Board, Bureau of Industrial Conservation, Industrial Salvage Section, Room 804, 122 E. 42nd Street, New York City.

"Every fleet operator," says Mr. Greenebaum, "can have a part in helping equip our sons, the soldiers, sailors, marines and flyers who are fighting an enemy now numerically superior and far better equipped. Every day's delay in selling scrap metals and unneeded machines and equipment means loss of lives and even setbacks for the United Nations.

"The types of scrap needed include iron, steel, copper, aluminum, zinc, lead, brass, bronze, tin, tin foil, rubber, wool, cotton, burlap, paper, cardboard, etc. No particle is too small to save and sell.

"But waste scrap will not be sufficient. Experience shows that every business has machines, equipment, parts, etc., that are no longer useful or needed, due to obsolescence, newer methods, changes of models, etc. Some of these can be sold as used equipment that will benefit others who can use them, but many of these machines, parts, etc., are now useless unless scrapped and turned into fighting equipment.

"For the sake of America and perhaps your own son in the army or navy, go through your plant with a fine tooth comb and wide open eyes to see what you can sell to save your country. Those fenders you no longer need, those old muffler pipes, the empty drums and cans, the old brake lining equipment, those rusting rims, radiator shells, old moldings, old spring leaves, cracked cylinder blocks, tools that are broken or no longer fit the job, axle shafts and spindles that are out of date, bumpers and bumperettes that are out of style, old clutch parts, perhaps even an obsolete transmission, rear end or steering gear. Draft them all for war service, call in your regular junk dealer and get them started on the road that leads to more planes, tanks and guns. Also get out the useless tires, tubes, floor

(TURN TO PAGE 32, PLEASE)

8 Reasons why Body Builders recommend Lindsay Structure

... survey of Leading Manufacturers reveals definite advantages to Fleet Operators



OLSON TRANS. CO. Says:
The all-steel Lindsay Structure bodies that we are now operating have been most satisfactory. They take all body-punishing loads in stride, displaying a rugged and durable construction. Their attractive appearance creates much favorable comment.

All-steel construction, ruggedness, durability, ease of repair . . . these are just a few of the many definite advantages mentioned by leading manufacturers in connection with Lindsay Structure bodies. This unit provides extra strength without extra weight, because panel sheets are "pre-tensed" so that they instantly resist distortion and greatly reinforce the framing. Thus, every ounce of steel is utilized and unnecessary weight is eliminated, making possible greater payloads. Investigate today. Write Lindsay Structure Division, Dry-Zero Corporation, 222 North Bank Drive, Chicago; or 60 E. 42nd Street, New York.

U. S. Patents No. 2017629, 2209407, 2263510, 2263511
U. S. and Foreign Patents Pending

S Parts for Lindsay Structure are Die-Rolled, Die-Drawn, and Die-Cut

LINDSAY STRUCTURE *ALL-STEEL* Truck and Trailer Bodies

1 All-Steel Body

Lindsay Structure is a unique method of putting steel panels under tension, providing strong unified construction.

2 Durability

Lindsay Structure bodies are capable of taking great punishment under full load.

3 Excellent Appearance

The smooth panels of Lindsay Structure bodies are wrinkle-free. No protruding bolts or seams to be smashed.

4 Low Cost

Mass production methods make possible initial low cost in buying Lindsay Structure. Upkeep is exceedingly low, too!

5 Tremendous Strength

By placing the Ls panels under tension every ounce of steel is utilized, creating tremendous strength.

6 Light Weight

By utilizing every ounce of steel, all dead-weight is eliminated making greater payloads possible.

7 Ease of Repair

Lindsay Structure requires no riveting or welding. Damaged panels can be removed without touching undamaged ones.

8 Custom-Built to any Size

Lindsay Structure bodies can be built to within 1/2 inch of any size.

Lindsay Structure Division
Dry-Zero Corporation
222 North Bank Drive
Chicago, Illinois

Please send me the new Lindsay Structure construction bulletin.

Name

Address

City

State 540

SHOWCASE OF NEW PRODUCTS



Texaco D-303 Oil

Texaco announces a new "heavy-duty" or "severe-service" oil, known as D-303, especially designed to meet today's all-out effort of continuous operation. Fortified by a newly discovered detergent, D-303 provides a "washing" action that keeps deposits from forming in the engine, and a dispersive action that holds deposit-forming material suspended in the oil. Carbon, sludge and other particles are drained away at regular drain periods. Ports, pistons, ring grooves, oil lines, screens, filters, etc., stay clean.

Marked E. P. characteristics that assure protection over a wide range of operating conditions are claimed for the new oil. In severe transcontinental operating tests, D-303 is said to have demonstrated unusual ability not only to keep engines clean, but to protect modern bearings and maintain high fuel economy.

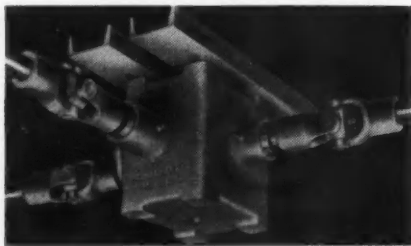
To truck operators who must keep equipment going all out under today's tough conditions, the makers of Texaco D-303 promise substantial operating and maintenance savings.

Auxiliary Angle Drive

This drive, developed for driving auxiliary equipment from a transmission type power take-off, is being offered by the Dean Valve Operating Equipment Co., 22 E. 38th Street, New York City.

Its function is to change the angle of drive shafts through 90 deg., and is made to operate with shafts in either a horizontal or vertical position. The unit is completely oil proof in any position.

Shafts are 1 1/4 in. diameter arranged for Woodruff keys and operate in bronze bearings. It is adapted for speeds up to 600



r.p.m. for intermittent operation. For speeds up to 1200 r.p.m. the bearings are of the ball or roller type. Capacity is about 5 to 7 1/2 hp. and weight 50 lb. With universal joints as shown, almost any angle of operation can be obtained.



Blackout Light

The Trippe Mfg. Co., 564-570 W. Adams Street, Chicago, Ill., announces the development of a blackout light for civilian purposes. The company claims "this light is definitely not the same as the military type blackout light being manufactured for army vehicles, but is a civilian adaptation suitable for installation on any make of car or truck. The construction is unique, employing a system of two reflectors and a ground and polished lens resulting in the entire elimination of all upward rays.

"These lights have a double purpose. They are not only excellent under blackout conditions, but may also be utilized as extremely efficient fog and auxiliary lights when not being used for blackout purposes. There is a three-point switch control which enables the driver to quickly select either a normal driving light or a blackout light as desired. When used as a blackout light there is enough illumination on the road to provide for a speed of 15 or 20 m.p.h., yet without visibility from the air above 6000 ft."

Upholstery Cleaner

The Magnus Chemical Co., Inc., Garwood, N. J., announces So-O-Kle-N, a new shampoo and cleaner for automotive upholstery. One of its chief features is that it is not harmful or hard on the hands; it will not remove color.

Blackout Flashlight Hood

A self-adjusting hood of woven elastic fabric that is designed to fit all sizes of flashlights, is offered by the Blossom Mfg. Co., 79 Madison Avenue, New York.

Reflex Reflector

Arrow announces a new 217 series reflex reflector. These are equipped with a specially designed plastic lens, which is claimed to develop much greater candlepower in reflected light. A sturdy steel housing and rim holds the lens, protecting it against collisions, blows, etc. The rim extends 1/2 in. beyond the lens to afford maximum protection. This 217 series is available in either red or amber lens colors, in either the round or oval type housings with gray enamel finish for civilian vehicles and olive drab for Army use. Arrow Safety Device Co., Inc., Medford, N. J.



Distrib-U-Scope

With the Weidenhoff Distrib-U-Scope you instantly get an electrical picture of what's happening inside the distributor. Replacements or adjustments for point action, spark advance, synchronization of double breakers, etc., are quickly shown and checked for accuracy. Full instructions and specifications are available from Joseph Weidenhoff, Inc., 4340-58 W. Roosevelt Road, Chicago, Ill.

New Model Fast Chargers

Quick Charge, Inc., Oklahoma City, Okla., offers two new fast charger models. These are the heavy-duty Model 80 six and 12-volt battery charger and the "Quickie Eighty" model. The heavy-duty model is mounted on wheels for easy portability. It is equipped with copper oxide rectifier plates, a heavy-duty transformer and has a full 80-amp. capacity. Other features include a 20-ft. heavy power cord, disappearing type DC cables of 10 1/2-ft. length. This unit will charge on the line as many as 15 batteries of the conventional low type rate.

The "Quickie Eighty" model weighs only 73 lb. and can be moved easily about the shop. It has an 80-amp. capacity, one-hour time switch, combination voltmeter and



ammeter. A built-in discharging unit also corrects for sulphated batteries. This unit is specially designed for economical battery charging in small fleets.

Trucks like planes are weapons of war . . .



Keep your trucks in action with Mack Service

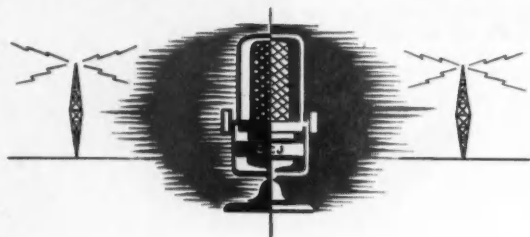
Vital to the war strength of the nation are the trucks that carry its goods. To conserve these trucks and to keep them working at peak efficiency is an urgent need of the times. At 70 Mack factory branches and 400 dealers throughout the country Mack-trained mechanics work with specialized service tools to "keep 'em rolling." To insure the longest

possible life for your trucks bring them to the nearest Mack branch or dealer. Consult your local Mack Service Manager about the Mack Preventive Maintenance Plan, a practical system of periodic check-ups which will save you money by correcting minor troubles before they develop into serious ones. Mack Trucks, Inc., Long Island City, N. Y.

The Mack logo, featuring the word "Mack" in a stylized, italicized serif font, with a horizontal line underneath it.

**THE MOST COMPLETE LINE OF TRUCKS IN THE
WORLD - 1 to 45 TONS AND ALL HEAVY DUTY**

NEWSCAST



17 Field Managers Appointed by ODT

Managers have been appointed for 17 of the 51 field offices to be established by the Division of Motor Transport, Joseph B. Eastman, Director of Defense Transportation, has announced. In addition to the administration of the various programs undertaken by the Division of Motor Transport, the field offices will assist the War and Navy Departments and other shippers of war materials in making arrangements for motor transport and will assist in coordinating and mobilizing motor vehicle equipment to meet war requirements. Field representatives will clear emergency motor transport movements with state and local authorities, and will maintain liaison with Army and Navy establishments, the Interstate Commerce Commission, and other government agencies.

Field officers and managers are:

Atlanta, Ga.—John G. Caley, formerly general manager of the Carolina Freight Corp.

Birmingham, Ala.—W. E. Duncan, formerly vice-president of the North Alabama Motor Express, Inc.

Boston, Mass.—Ell C. Benway, formerly manager of the Motor Truck Club of Massachusetts, Inc.

Charleston, S. C.—William B. Love, Jr., formerly general manager of the Motor Transportation Assoc. of South Carolina.

Dallas, Texas—S. J. Cole, formerly secretary and manager of the Common Carriers Motor Freight Association of Dallas.

Denver, Col.—E. Robert Baker, formerly executive secretary and treasurer of the Colorado Motor Carriers Assoc.

Hartford, Conn.—John Maerz, formerly practiced before the Interstate Commerce Commission.

Indianapolis, Ind.—George F. Burnett, formerly president and general manager of his own automobile transport company.

Jacksonville, Fla.—H. E. McDaniel, formerly executive secretary of the Florida Trucking Association, Inc.

Little Rock, Ark.—William R. Atkins, formerly safety inspector for the Interstate Commerce Commission's Bureau of Motor Carriers.

Norfolk, Va.—Maclin Simmons, formerly engaged in the distribution of motor vehicle lubricants in the Norfolk area.

New York, N. Y.—William J. Clarke, formerly secretary-treasurer and general manager of the Highway Express Lines, Philadelphia, Pa.

Philadelphia, Pa.—Everett A. Harding, formerly with Horlacher Delivery Service.

Phoenix, Ariz.—William Cox, formerly manager of the Motor Transport Dispatch office established under the Office of Defense Transportation at Phoenix.

Portland, Ore.—Herman Sites, formerly president of the Portland-Pendleton Motor Freight.

San Francisco, Cal.—W. B. Grummel, formerly vice-president of the Pacific Intermountain Express.

Spokane, Wash.—Holly I. Smith, formerly vice-president and general manager of Caters Motor Freight System.

J. H. Hoffman and M. J. Greene, both of Baltimore, Md., and H. S. Blackwell, of Johnson City, Tenn., have been appointed to the Washington office of the Division of Motor Transport.

SAE Cancels Summer Meet; Will Hold Sectional Sessions

Continued presence of enemy diplomats at The Greenbrier, White Sulphur Springs, has made it impossible to hold the 1942 SAE Summer Meeting there as originally planned. Emergency war conditions make it impossible for the railroads to guarantee sufficient special pullman cars to carry SAE crowds to White Sulphur or any suitable site. Instead the SAE National Activity Committees will take special meetings to various Section cities throughout the summer and fall.

ODT and WPB Appointments

Arthur B. Newhall, recently appointed Coordinator of Rubber by the WPB, will direct and integrate all problems dealing with the use, control or production of natural or synthetic rubber.

Harry G. Brandt has been named Associate Director of the Division of Railway Transport. He will work in cooperation with staff members of the Division of Motor Transport to coordinate rail and truck operations in the western region.

Truck Trailer Committee

The bureau of Industry Advisory Committees has announced the formation of a Truck Trailer Industry Advisory Committee. R. L. Vaniman is government presiding officer. Committee members are:

Harvey C. Fruehauf, Fruehauf Trailer Co., Detroit; Bert P. Bates, Highway Trailer Co., Edgerton, Wis.; M. N. Terry, Trailmobile Co., Cincinnati; W. C. Nabors, W. C. Nabors Co., Mansfield, La.; M. J. Neeley, Hobbs Manufacturing Co., Fort Worth, Tex.; Harrison Rogers, Rogers Brothers, Albion, Pa.; N. A. Carter, Carter Mfg. Co., Memphis; Harry N. Brown, Keystone Trailer & Equip. Co., Kansas City, Mo.; Christopher Hammond, Jr., Steel Products Co., Savannah; H. C. Bennett, Utility Trailer Mfg. Co., Los Angeles; A. B. Trombly, Trombly Truck Equip. Co., Portland, Ore.; C. H. Kingham, Kingham Trailer Co., Louisville, Ky.; J. L. Glick, Truck Engineering Co., Cleveland; F. H. McIntyre, Carolina Truck & Trailer Co., Charlotte, N. C.; Myles Standish, Omaha Standard Body Corp., Council Bluffs, Iowa; J. C. Farrell, Easton Car & Const. Co., Easton, Pa.; G. A. Burns, Butler Mfg. Co., Kansas City, Mo.

(TURN TO PAGE 94, PLEASE)



R. C. Archer (left) has been promoted to director of domestic and Canadian sales for International Harvester Co. T. B. Hale (right) succeeds Mr. Archer as manager of IHC's domestic sales. P. V. Moulder continues as assistant domestic sales manager in charge of truck business and A. J. Peterson continues in charge of farm equipment



Frank A. Hiter has been elected a director of Stewart - Warner Corp. He is also a vice-president and general sales manager for the company

T. H. Paramore has been named as service manager of White Motor Co.'s Federal Division for the duration. He will handle procurement and distribution of parts



Graham B. Trainer, Chrysler representative in India, has been assigned to the Storage and Issue Branch of the U. S. Army in Washington, D. C.



Robert A. Wickes has been appointed secretary and treasurer of American Bosch Corp., succeeding C. C. Francis, who resigned to head the Putnam Trust Co.



New Truck Registrations by Makes by Months*

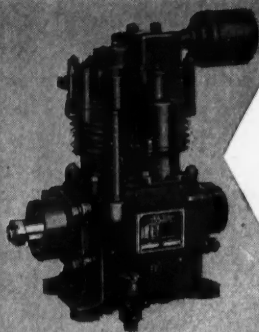
	Auto-car	Brook-way	Chevrolet	Diamond T	Dodge	Federal	Ford	G.M.C.	Hudson	Inter-nat'l	Mack	Ply-mouth	Reo	Sterling	Stude-baker	White	Willys	Misc.	Total
January.....1942	128	65	6,829	272	2,616	100	6,559	1,778	21	3,604	352	62	77	15	176	493	63	176	23,356
January.....1941	189	155	15,801	447	4,498	120	15,797	3,388	65	7,445	673	886	79	34	231	662	82	300	50,830
Per cent change.....	-32	-58	-57	-39	-42	-17	-58	-48	-68	-52	-48	-93	-2	-56	-24	-30	-23	-41	-54

* January new registrations are not indicative of new sales during that month as many of the registrations are for sales made late in December but not recorded until January.

Only MIDLAND AIR BRAKE KITS

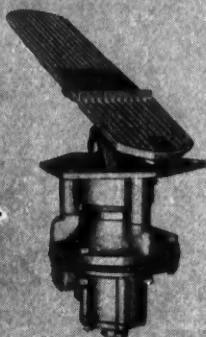
Offer you these
3 exclusive
advantages

AT NO
EXTRA COST!



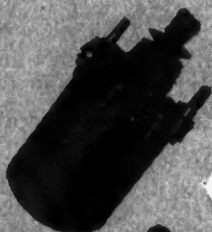
BIG 7.3 CU. FT. COMPRESSOR

with governor as *integral part*. No additional control units required.



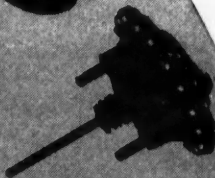
BUS-TYPE TREADLE VALVE

same as used on heaviest vehicles. Gives positive control to full tank pressure.



YOUR CHOICE of cylinders or dia- phragm chambers.

PLUS * * *
Reservoirs, couplings
and all necessary parts
for quick, easy installation.



MIDLAND KITS Available for 1942 Models

Air

Ford, Chevrolet, Dodge, International,
G. M. C. and Diamond T

Vacuum

Ford, Chevrolet, International,
Dodge and G. M. C.

● You get the same *high quality, heavy duty* parts in Midland Power Brake KITS as those used as *standard equipment* on large-size trucks, tractors and trailers! And Midland's thorough engineering means fewer parts, quicker installation, more positive control, less maintenance and lower cost. Every part backed by Midland's famous Factory Rebuilt Exchange Plan. See your nearby Midland Distributor—or write us direct for complete information.

THE MIDLAND STEEL PRODUCTS CO.
10605 MADISON AVE. • CLEVELAND, OHIO

Export Department: 38 Pearl Street, New York City



MIDLAND POWER BRAKES
(CHRISTENSEN)



TIRES AFFECT AXLES

(CONTINUED FROM PAGE 30)

wheel and a differential. When turning a corner it is necessary that the outer wheel turn faster than the inner and the differential makes this possible. The differential is a relatively small set of two side gears and four pinions which act as a speed balancing device between the two axle shafts. Fig. 9 shows the arrangement

of final drive gears and differential in a bevel gear axle.

The differential is designed to balance the power between the two axle shafts but is expected to function as a speed balancer only for momentary periods in turning corners and not for continuous operation.

By means of the differential, the drive gear speed will always be the mean of the wheel speeds. If one wheel makes 580 revolutions per mile and the other makes 590, then the

drive gear is turning 585 revolutions per mile. Under these conditions the differential is working continuously and will cause unnecessary wear. If at the same time the differential is starved of lubricant due to too low oil level in axle, then the differential pinions may freeze on their trunnions.

It is highly desirable to have both rear wheels turning at the same speed, which means that the loaded radius of the tires must be equal.

Single Tires on Front Axles

On front axles, single tires only are used for normal operation of trucks. Tire inflation is an important factor in steering front axles. This introduces another feature of tire behavior. The increased deflection of a tire increases the area of contact with the road. The shape of this tire contact is indicated in Fig. 10. With a lower inflation, the area of contact increases to that indicated by the dotted line. With more contact area, steering requires more effort. This can be quickly checked by changing inflation pressures on the front tires of any truck and observing the steering effort required with each inflation pressure.

If front brakes are equalized, then a difference in loaded radius between the two front tires will cause the tendency to pull to one side. The tire with the smaller loaded radius will have more pull due to a shorter lever arm, with the same brake output.

Relation of Tires on Two or More Axles Connected Together


In the tandem drive six wheelers, the two rear axles are connected together by the propeller shafts. Therefore, it is vital that all four rear wheels rotate at the same speed which means that the loaded radius of tire must be the same all around.

Take the example of trucks equipped with 7.50/20 tires and 6.6 axle ratio. If the wheels on the rear, rear axle make 582 revolutions per mile then the pinion shaft will make $6.6 \times 582 = 3841.2$ revolutions per mile. If the conditions of the tires on the forward rear axle were such that the wheels would make 577 revolutions per mile, then the pinion shaft would want to make $6.6 \times 577 = 3808.2$ revolutions per mile. It takes only a
(TURN TO PAGE 48, PLEASE)


Depend on **WITTEK**

NOC-OUT

HOSE CLAMPS




TYPE GM




**Type A — Ad-
justable For
Replacement.**

**The Standard Of The Industry
For Quick-tightening, perfect
leakproof hose connections**




**Type HP — For
High Pressure
Requirements.**



WITTEK

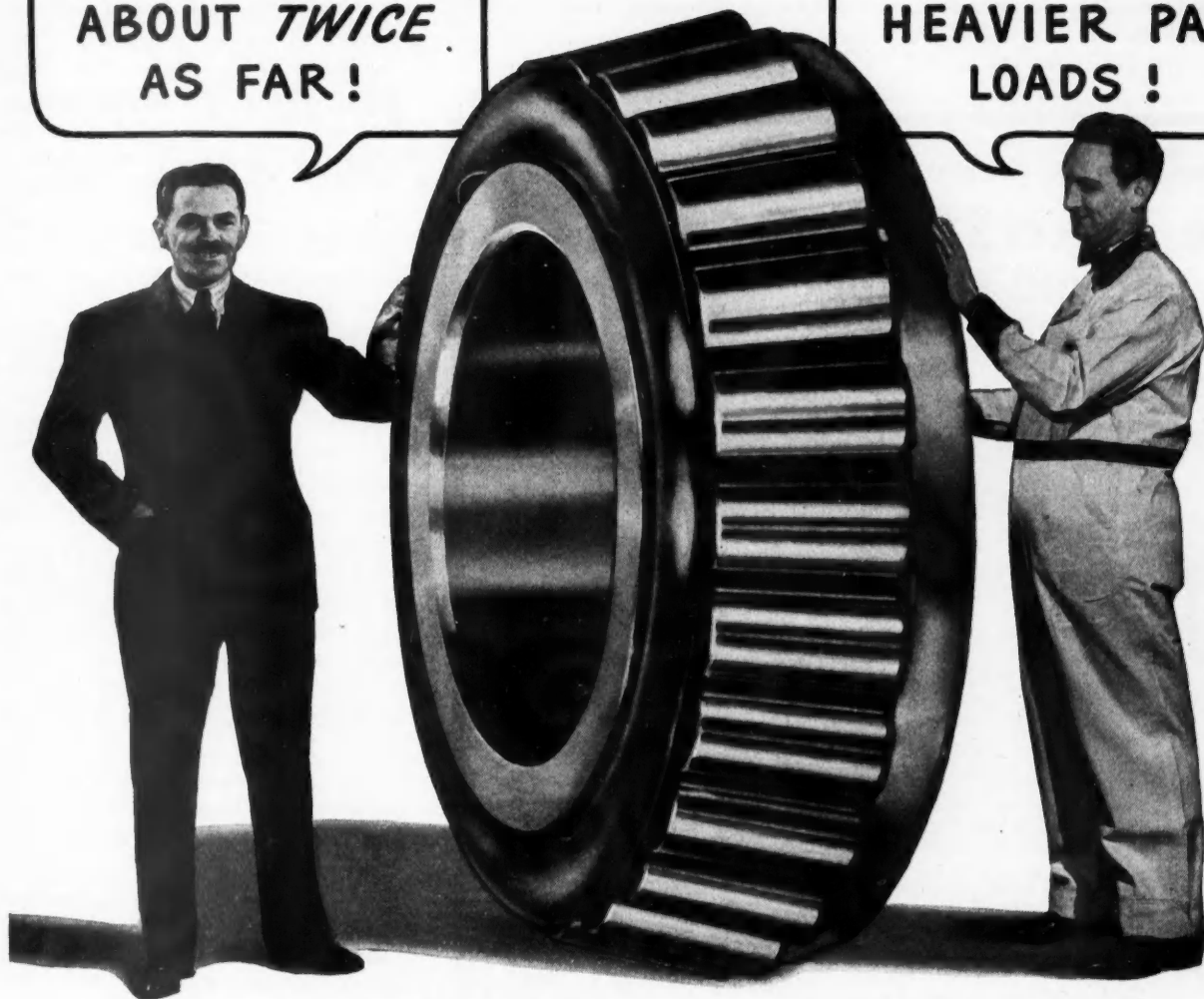
MANUFACTURING CO.
4305-15 W. 24th Place, Chicago, Ill.



You'll Go Farther With *Tyson* Bearings

ACTUALLY
ABOUT *TWICE*
AS FAR!

... AND CARRY
HEAVIER PAY
LOADS !



● Here's a tapered roller bearing that delivers more miles, more capacity, more rugged dependability.

The cage of the conventional bearing

has been entirely eliminated and the in-between spaces filled with load-carrying rolls—30% more rolls, on the average.

You'll go farther with Tyson Cageless.

Cageless FOR HARD SERVICE

Cage-type FOR REGULAR SERVICE

Tyson

TYSON ROLLER BEARING CORPORATION, MASSILLON, OHIO

(CONTINUED FROM PAGE 46)
slight difference in tire loaded radius to have this condition, as will be seen by referring to Charts I and II.

Because the two pinion shafts are connected, a difference in rotative speeds cannot exist, so what happens?

The rear axle tries to over-run the forward axle and the forward axle tries to slow up the rear and the result is called "wheel fight."

The flexible tire tread squirms and slips on the road, the propeller shaft tries to wind up, the axle shafts try to wind up, the gear teeth are loaded

up to extremely high pressures, bearings are overloaded with dire results if continued over a period of time.

Extremely high pressures between gear teeth squeeze out all lubricant and "steel to steel" contact results in gouging out the steel on the gear teeth. Tire treads are literally "sawed off."

This sounds very complicated but as a matter of fact the answer is very simple as shown by a large operator in Chicago who has some six wheelers on which tires are carefully inspected and maintained. The tire

mileages obtained were greater than ever reached on their conventional four wheel trucks, proving that uniform tire loaded radius produces maximum tire mileage regardless of vehicle design.

If an inter-axle or third differential is used between the two driving axles, then wheel fight due to improper tire inflation is eliminated. However, third differential maintenance is introduced and also it must be remembered that the slipping of one rear wheel will prevent movement of the vehicle as in an ordinary four wheel truck. The big advantage of two driving axles is sacrificed because the operator refuses to maintain tires.

The relation of tires to axles on the four wheel-four wheel drive and six wheel-six wheel drive trucks is exactly the same as with the tandem axle drive just covered.

From the foregoing, it is evident that tire maintenance plays an important part in axle operation and maintenance. It has also been shown that checking tire inflation only is not sufficient. It is necessary to maintain the same loaded radius for all tires for best results. How?

First, the tires for any truck should be checked for circumference with a measuring tape and tires should be mated into sets.

After proper inflation, in accordance with the load carried, the loaded radius can be readily checked by measuring from a flat level surface, on which the loaded truck is standing, to the centerline of the axle. A convenient gauge is shown in Fig. 11. This dimension shown being the same for all wheels. Any necessary adjustments are obtained by changing the tire inflation pressure.

The inspection of tires as outlined here will result in more satisfactory axle performance, easier driving, reduced axle maintenance and longer tire life.

We have tried to prove that checking tire inflation pressures only is not any guarantee of proper tire maintenance. We also remind you that the same inflation pressure in the same size tires but having various degrees of wear will not result in the same tire loaded radius. If tires have been re-capped, be sure that they are used in pairs to get equal loaded tire radius for dual tire mounting.

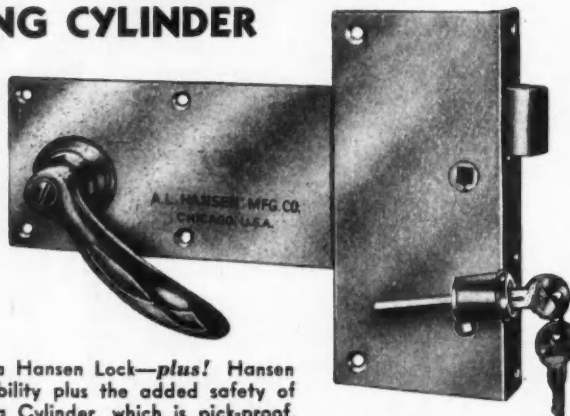
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(Please resume your reading on P. 31)

... for Greater Safety to Merchandise

Use HANSEN LOCKS with LOCKING CYLINDER

No. 40-L EXTENSION LOCK (right - hand), with Locking Cylinder and two keys. Made in one piece with inside handle.



HERE'S a Hansen Lock—plus! Hansen dependability plus the added safety of a Locking Cylinder, which is pick-proof, tamper-proof—against loss or theft of merchandise in transit, stored or left in truck. Equip your truck or fleet bodies with Hansen Locks with Locking Cylinders—for complete protection to deliveries.

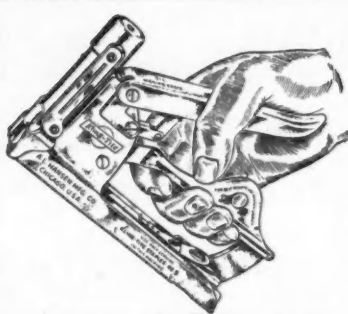
Locking devices have been added to many of the standard Hansen Locks, including Locking Cylinders, Locking Handles and special types of Locking Mechanism. It costs little extra to lock-equip your Locks—and it's much safer!

Hansen Locks are noted for their rugged strength, simplicity and serviceability. The Hansen Line includes Refrigerator, Slamming, Slam-and-Take-up, Cab, Extension and Sliding Door Locks—also, Regulators, Hinges, Handles, etc.—all built for service!

On your next order for bodies—one or a fleet—be sure to specify HANSEN—the Hardware for Hard Wear!

No. 124 SLAM-AND-TAKE-UP LOCK with Locking Cylinder and two keys. Can be supplied with either Flush or "T" Handle.

SEND FOR CATALOG—if you don't already have one. It shows the complete line of Hansen Hardware and One-Hand Tackers.



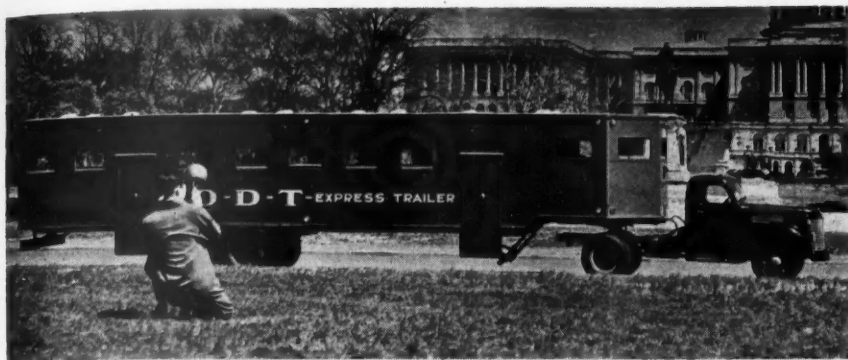
HANSEN ONE-HAND TACKERS

Used in automotive and airplane industries for various tacking and fastening jobs—insulation, seat covers, airplane construction, etc. For driving Tackpoints up to 1/2" length. Powerful. Portable. One-hand operation.

Write for Descriptive Folder

A. L. HANSEN MFG. CO.

5047 Ravenswood Ave., CHICAGO, ILL.



Designed by ODT and WPB technicians, this 141 passenger trailer is proposed as a solution to transportation shortages

TRUCKS - TRAILERS ADAPTED TO MASS TRANSPORTATION

TWO new bus-type trailer transports are being considered by government transportation men for use as passenger carriers, particularly in industrial areas. One of these is the actual conversion of a drive-away trailer into a passenger carrying vehicle; the other is the result of a design conceived by a committee representing the Office of Defense Transportation, the War Production Board, and the Army and Navy Munitions Board. Both are designed to be hauled by 1½-ton tractors.

The first of these is a drive-away conversion operated by Baker Driveaway Co., Inc., Detroit. This vehicle will be used at the Ravenna Arsenal in Ohio to transport war workers on short hauls up to four miles about the Arsenal grounds. It has a seating capacity of 45 persons and can accommodate 45 standees.

Cost of the conversion is estimated at \$500. Construction is of wood. It is estimated that 2500 drive-away trailers are available in Michigan alone for similar conversion to relieve highway traffic and reduce use of private automobiles.

The other passenger-carrying trailer which resulted from collaboration of government offices, was designed by Frank H. Shepard, special assistant to Guy A. Richardson, director of ODT's division of Local Transport. Fred B. Lautzenhiser, technical consultant to the Automotive Branch, Division of Industrial Operations, WPB, assisted in its design.

This trailer has a seating capacity three times that of an ordinary city bus and twice that of a street car. The trailer chassis embodies an ingenious application of a conventional design steel frame with a plywood and masonite superstructure. It rolls on eight truck tires, with the usual six tires on the tractor. Because of the light weight of the unit in relation to the load carried, and the use of a modern-type floating axle, efficiency in the use of tires will be far greater than in any other

(TURN TO PAGE 52, PLEASE)

**Right Up Here
in the Cab**

**THE SERVIS RECORDER
HAS ENLISTED**

*On Motor Trucks, Airplanes
and Factory Machinery-*

-Speeding Transport and Production for Victory!

"Make use of what you already have." That's the order of the day.

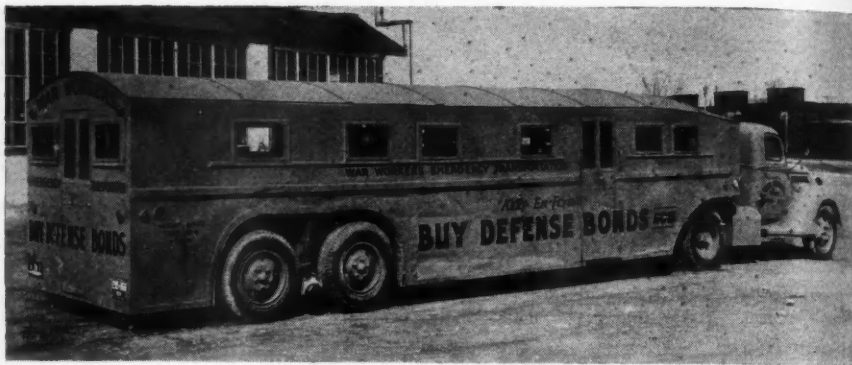
Uncle Sam is in that kind of a fix, and it just so happens that this problem is right down the alley of the Servis Recorder.

"A pound of Servis Recorder" can and often does save more than half a ton of motor truck, or factory machinery!

The trucks you already have—keeping them busy, making five trucks do the work of six, getting an extra trip a day, cutting down loading time, etc., etc.—Sounds practical; IS practical. It helps the war effort. At your service. THE SERVICE RECORDER Co., 1375 Euclid Ave., Cleveland, Ohio.



The Servis Recorder
Tells Every Move Your Truck Makes



It cost only \$500 to convert this drive-away trailer into a bus seating 45. It answers query "What to do with drive-aways?"

(CONTINUED FROM PAGE 51)

WHY EDWARDS TRAILERS ARE PROVING THEIR METTLE NOW

THIS war is making exacting demands on the haulage equipment that is a valuable cog in America's all-out will to win. And Edwards Trailers are really proving their mettle.

No wonder. For Edwards Trailers are designed and built with ability to carry payloads beyond the limits ordinarily imposed in normal times. Such an extra margin of ability is worth much at any time—more in these.

DEALERS!
INCREASE YOUR SALES VOLUME
 Edwards Trailers today offer an opportunity to re-cover a good part of your sales volume. Now is also the time to really establish yourself permanently in the field. Your present equipment is all that is necessary to service Edwards Trailers. Attractive proposition. Write or wire today.



EDWARDS SEMI-TRAILERS
 EDWARDS IRON WORKS, INC., SOUTH BEND, IND. Meet Present-Day Demands

type of rubber-tired passenger carrier so far developed.

Maximum load of the trailer is 141 persons. The vehicle contains 87 fixed seats, and 24 drop seats are to be installed later. An additional 30 standees can be accommodated. Length of the truck-trailer unit as a whole is 55 ft., and the trailer alone is 45 ft. long. Weight of the trailer is 12,000 lb. as compared with 17,000 for a standard type 40-passenger city bus.

The trailer is intended primarily as a stop-gap vehicle for mass transportation of workers to plants located in areas where no other public transportation facilities are available and where workers would otherwise depend on private automobiles as long as these remained available. Assuming an average load of two workers per private automobile, the truck-trailer would carry on 14 tires a passenger load equivalent to that which would otherwise be carried in 70 automobiles using 280 tires.

Automotive Council Appointments

The Automotive Council For War Production announces the appointment of Arthur C. Butler as head of the recently organized Military Vehicles Division. Mr. Butler formerly manager of the Motor Truck Division of the Automobile Manufacturers Association, will be located in Washington representing the motor truck, coach and trailer vehicle producers for the military forces and for war transportation purposes.

James G. Ellis will be associated with Mr. Butler in Washington. Mr. Ellis has been with the Motor Truck Division of the A.M.A.

Mr. Walton Schmidt has been named as assistant manager of the Military Vehicles Division, he will be located in Detroit and will work with military vehicles technical committees. Mr. Laurence E. Tilley, has also been added to the Washington staff.

Houghton to Handle Lubri-Zol

Effective May 1, 1942, the E. F. Houghton & Co., of Philadelphia, will take over the retail sales division of the Lubri-Zol Corp. of Cleveland, Ohio. The Houghton organization will now manufacture, sell and service Lubri-Zol lubricants.



HEAD AND SHOULDERS

over ordinary piston ring sets!

NO matter how you judge them, you'll find Sealed Power Individually Engineered Ring Sets are distinctly better. Easy to understand why. Sealed Power engineers have worked closely with builders of leading cars and trucks for 30 years, creating the piston rings engineers prefer. Sealed Power Engineered Ring Sets are the result of this intensive experience. Thus they meet the individual requirement of the motor better, work better, give greater satisfaction. You just can't buy better piston rings!



SEALED POWER CORPORATION
MUSKEGON, MICHIGAN
In Canada: Windsor, Ontario



FOR ALL POPULAR MAKES OF CARS AND TRUCKS

EMERGENCY TIRE RATIONS FOR TRUCKS

Revised regulations will make emergency tire certificates, equal to 10 per cent of tires on wheels, available to List A ICC-controlled over-the-road operators

EMERGENCY reserves of tires and tubes for quick replacements of blow-outs will be made available to some long-distance bus and truck operators to save time and rubber in carrying vital materials, according to an announcement by Leon Henderson, administrator, Office of Price Administration.

Single spares, as now permitted for each wheel-size, are frequently not enough. Vital time may be lost when more than one tire of a size blows by the necessity of applying for replacements to a rationing board remote from a vehicle's base of operations and unfamiliar to the driver.

Often when a tire on a dual wheel blows, its companion will blow also. Even when it does not, the remaining tire may be seriously damaged.

Amendment No. 5 to the Revised Tire Rationing Regulations, effective April 22, allows an emergency reserve of tires and tubes equal to 10 per cent of the total number of running wheels on qualified vehicles—in addition to spares already permitted.

OPA will make available either emergency reserve certificates for new tires and tubes, or regular certificates for retreading or recapping when the applicant has extra tire carcasses. Certificate holders may purchase immediately the tires and tubes or hold certificates for use as need arises.

If tires are bought immediately, the purchaser may spot them at points along routes over which his vehicles operate.

To qualify for emergency certificates a vehicle must be either operated by a state government or subject to Interstate Commerce Commission regulation. In addition, it must be eligible under List A of the Revised Tire Rationing Regulations and have more than 50 per cent of its regular operating mileage on runs 50 miles

or more from the nearest depot where the operator has tires stored.

No applicant qualifies under the plan, unless all his vehicles, except passenger cars, are on List A, which includes vehicles operating only in service deemed most necessary. Where only part of a fleet qualifies, under the long-haul provision of the plan, emergency certificates may be allotted for those vehicles. Tires obtained with emergency certificates may be used on any vehicle in the fleet.

Emergency certificates and emergency reserve tires together are not to exceed 10 per cent of the total number mounted on running wheels of long-haul eligible trucks in possession of the certificate-holder. In the case of small operators who have so few wheels on qualified vehicles that the 10 per cent computation would show them entitled to less than one tire, at least one emergency reserve certificate will be allotted. The operator of a single eligible truck is not excluded from the plan.

Operators covered, but who already have a reserve supply of tires greater than the 10 per cent permitted, may not be allotted certificates until their stocks have been depleted below that level. Those who have no reserves beyond the spares they are entitled to carry under the rationing regulations, or who have reserves less than 10 per cent of the total on running wheels, may apply for emergency certificates to make up the deficiency.

The certificates, to be issued by local rationing boards, will be granted only after the applicant has filled out a form requiring full disclosure of all pertinent information in regard to tires already in his possession. Applications for an original allotment are to be filed not later than May 15, 1942. The person who signs the application must appear before the

issuing board for any questioning necessary.

When an operator's emergency reserve falls below the 10 per cent level, provision is made for replenishment. In applying for replenishing certificates, an operator must satisfy conditions virtually the same as those governing issuance of regular tire purchase certificates, except that off-the-wheel inspection is permitted.

Before applying for an emergency reserve, an operator must withdraw any pending regular application for a tire rationing certificate. Emergency reserve applications by commercial operators are to be made to the rationing board having jurisdiction over the area in which the applicant's principal place of business is located. In the case of state-owned vehicles, the board with authority in the area containing the seat of government is the one to which application should be made.

Procedure for replenishment of emergency reserves after they have been depleted calls for applications to the board that granted the original emergency certificates. Thus an operator may center all his dealings with a single board. If the applicant's tire or tube is no longer serviceable and cannot be repaired or recapped, he may request new tire and tube certificates. If a casing may be made serviceable by recapping, application should be made for permission to get a recap job.

Certificates issued to establish the original emergency reserve are not to be charged against the quota of the board that issues them. Each board will keep a record of the emergency certificates it grants. These records are intended to aid in allotting quotas. After the original emergency allotments, however, all certificates issued for replenishment are chargeable against local board quotas.

Amendment No. 5 contains, besides the authority for the emergency reserve plan, provision under which any operator may shift tires from a List A vehicle to other vehicles declared eligible under List A by a local board.



"Don't drop any of that, boys, we're in a quiet zone."

FEDERAL TRUCKS



SPEED INDUSTRY'S WAR CARGOES TO AMERICA'S FIGHTING FRONTS

OVER THE NATION'S web of high-ways shuttle transport fleets that never anchor—fleets of swiftly moving motor trucks that serve America's urgent armament needs—help speed munitions, materials, fuel and food to fighting fronts across a world at war. Day and night, without fuss or fanfare, they carry out their appointed tasks, ignoring headlines to maintain vital supply lines.

With war production imposing greater and still greater burdens on transportation, the part Federal Truck heavy duty performance plays

in the battle of supply assumes added significance. This extra rugged performance is the direct result of consistent adherence to an over-all, *balanced* truck construction.

You will find motors, axles, gear ratios, transmissions, clutches, running gear, chassis frames and springs accurately matched and engineered—one with the other—to insure the utmost reliability coupled with bed-rock operating efficiency and economy. That's why Federal Trucks are competent to handle the toughest job assignments with utmost dependability.

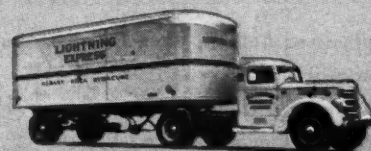
FEDERAL MOTOR TRUCK CO., DETROIT, MICHIGAN



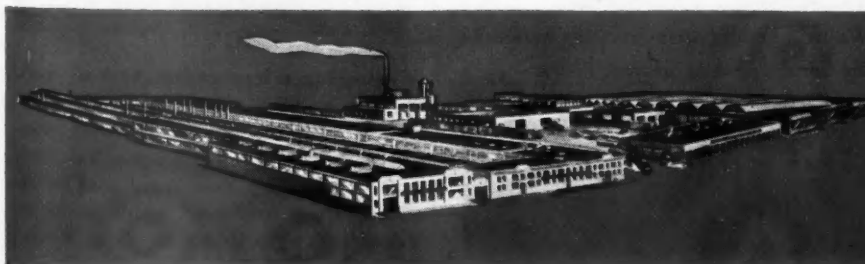
Many municipalities now specify Federal fleets where specially built units are required for specific jobs.



This husky, streamlined street flusher shows the Cab-Over-Engine Federal, providing space-saving advantages.



Federal trailer-tractor units are available in a variety of models to meet every need of load and road.



FEDERAL Trucks
SINCE 1916—Known in Every Country. Sold on Every Continent.

QUIZ ANSWERS

(Questions on Page 114)

1. b. Your all-important tires. Oil and grease deteriorate anything made of natural rubber. (The new synthetic rubbers have this one big advantage over natural rubber in their resistance to oil and grease.) If oil or grease should get on the tires, remove it immediately with soap and water.
2. d. 10,000 gallons. A clogged up air filter wastes precious gasoline and also lets dirt, dust, and foreign matter

through to work havoc on precision engine parts.

3. a. When roads are icy or slippery, a slight amount of underinflation produces better traction and reduces the danger of skidding. Otherwise, underinflation wears out tires faster, wastes gasoline, and adds wear to engine parts.
4. c. To protect against "vapor lock," which is caused by bubbles in the pipeline when the gasoline gets too hot and boils. After a hard drive in hot weather or after driving in mountainous country, the engine should be left to idle a few

minutes before the ignition is turned off. This also prevents loss of water from boiling.

5. d. Chrome-plated surfaces will last longer if washed frequently. After washing and drying, apply a protective coating of ordinary furniture wax. If wax isn't handy, a little motor oil will do the job.
6. b. Plugs that are too cool for the engine are likely to become coated with soot and oil, causing the engine to "miss". And while on the subject of spark plugs, it's a good idea to remember that bad plugs can waste as much as one gallon of gasoline out of every ten. Tests prove it.
7. b. Certain small insects which attack the leaves of trees, especially elms and maples, give off a residue which falls and re-acts chemically upon the enamel finish. The truck will appear to be covered with little sticky spots that are hard to rub off. These should be washed off as soon as possible.
8. d. Your wheel alignment is at fault. Even a very slight variation from correct adjustment will cause rapid wear on the tires. Check the alignment of your wheels regularly if you want your tires to tide you over. It's especially important to check after a minor accident, such as skidding into a curb.
9. b. Stale beer, so they tell us, is popular as a cleaning fluid in fine glass shops. Old linen makes the best rags for cleaning glass.
10. a, b, c, and d. All four are gasoline wasters, and you had to check every one of them to give yourself credit for a correct answer. Low gear driving means more engine revolutions per mile and fewer miles per gallon. "Pumping" the accelerator pedal is hard on the engine and wastes fuel. Speeding may increase gas consumption as much as 50 per cent. Sudden stopping wastes momentum that has taken gasoline to build up.

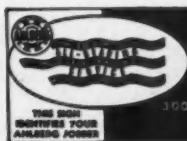


NOW that your fleet is on full time operation, periodic careful inspection is more important than ever. Especially the wheels and differentials.

Your Authorized Ahlberg Wholesaler can give you real help to keep them rolling. He has Bower "Super-Finish" Roller Bearings, long famous for long run performance on original equipment. But regardless of what you need in bearings, Ball, Roller or Thrust, you will find that, if available at all, he has them or knows

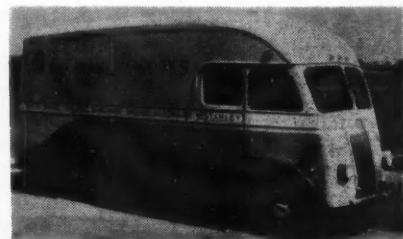
what to do. Helping you keep equipment rolling is his most important job. Get acquainted now if you don't know the "AHLBERG" man and see for yourself what he can do.

We will gladly give you the name of the service that is nearest to you.



Ahlberg Bearing Company

Manufacturers of CJB Master Ball Bearings
3006 WEST 47TH STREET - CHICAGO - 30 WAREHOUSE BRANCHES
Dist West by PRECISION BEARINGS, INC. Los Angeles



Gerstenlager has undertaken to make it hot and/or cold for summer and winter operation of this display truck operated by Stanley Works, New Britain, Conn. Dry Zero insulation in the walls, floor and roof helps keep the temperature in line. Chassis is White's

STEPS YOU CAN TAKE TO Tire Certificate

- 1** When issued a new-tire certificate, use it to buy a General Truck Tire . . . with the Quality you know will give you longest possible original mileage.
- 2** When issued a recap certificate, use it to secure the kind of tire renewing available only through General's nation-wide, factory-control Kraft System.
- 3** When you need expert tire engineering advice or maintenance service, go to the man who has always been a truck-tire specialist.. your General Tire Dealer.

The number of original miles and the number of recap miles obtained from a truck tire have always directly affected the economy and efficiency of truck operation.

Far more important, today . . . the *total mileage* a truck tire now delivers is vitally essential to our war effort.

Every truck operator who is entrusted with a new tire certificate takes on a serious obligation to make that certificate conserve America's stockpile of rubber to the greatest possible extent.

At a time when no one can afford

to experiment, more and more certificate holders are turning their *entire* truck-tire problems over to their local General Tire Dealers.

They are confident that by putting the responsibility for inspection, recapping, and the recommendation of new tires into the hands of a recognized truck tire expert, they are meeting their obligation to make every pound of rubber count. They know they are going all the way to keep their trucks running efficiently . . . from the standpoint of both their own business operations and winning the war.

THE GENERAL TIRE & RUBBER COMPANY • AKRON, OHIO

SAVE BY SALVAGE

(CONTINUED FROM PAGE 33)

part is sufficient for our loads but welding both top and bottom would be necessary to sustain heavier loads.

It is a common practice to mount the body on a 6 or 8 in. wood cross member on top of the chassis frame, but this increases overall height. Every inch of added height increases wind resistance, with consequent increase of gasoline consumption and

extra burden on the engine. By acetylene welding these members, we get a flush top. Then we can mount the body flat on the chassis frame without machining. This makes a solid lasting construction. It also saves the cost of the extra wood supports.

We have just completed overhauling another 1935 model, 1½-ton, representing the same time and labor costs for motor and chassis but without a new body, as the old one was still usable. We have one other 1935

model ready for complete rebuilding. On this basis the per mile cost on the overhaul job affords a big saving compared to the cost of new units, but the important thing is that it is worth while conserving vital materials needed to promote and prosecute offensive war against our enemies. This policy, combined with even more intensive check-ups on tires, batteries, brake lining, lubrication and motor tune-ups will extend the average life of our trucks three years beyond. This proves that salvaging parts is the most important factor in keeping our equipment rolling.

For the past two months we have cut down deliveries by one-third. Officials of our company have instructed our driver salesmen to explain the necessity of conserving equipment, and especially tires, to all customers, urging them to buy in larger quantities. All have complied without reservation or complaint. The advantages to all concerned are so obvious as to need no further explanation.

Two of the most important pieces of equipment in our shop are acetylene soldering irons, one large unit in the maintenance shop, and a small portable which the mechanics can carry wherever needed. Each has a fine match-size flame and not only facilitates the efficiency but speeds the work. We are no longer able to buy sets of ignition and light wiring. We buy this on large spools, cut to required lengths and solder connections quickly. This process saves both time and money and conserves material.

Making Trucks Last Longer

by Art Barge

Shop Foreman, A. H. Perfect & Co.

OUR fleet, consisting of four trucks, seven truck tractors and eight semi-trailers, fortunately was in first class condition as we entered the war. Although we have no units older than 1939, our goal is to maintain and salvage everything possible to extend the life and service of these units by at least two years.

Obviously, salvage of working parts from our comparatively new equipment has not been on a large scale but will take increasing precedence from now on. To illustrate, one of our trucks uses an oil cooler in the

(TURN TO PAGE 62, PLEASE)

A NEW WAY TO



SLASH

FLEET COSTS

NATIONAL COMMERCIAL FLEET SERVICE REDUCES OPERATING COSTS THREE WAYS!

Seventy-five per cent of all premature repairs result from neglect or faulty lubrication. National's new COMMERCIAL FLEET SERVICE hammers down replacement and repair costs three ways:

FIRST: It gives you detailed Periodic Inspection Reports on every piece of equipment, reducing costly repair at its source.

SECOND: It gives you a simplified Cost Record System to check operating costs on each vehicle.

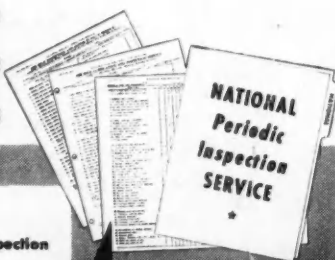
THIRD: National Enarco Motor Oils and Lubricants, designed for heavy duty service keep operating costs at a new low.

This new service gives you a new high in performance, improved fuel economy, lower operating costs, and more profitable pay-load hours.

Get all the facts on National's Commercial Fleet Service today, and start on the road to longer equipment life... lower cost per mile operation.

SEND FOR YOUR
SAMPLE COPIES OF
NATIONAL'S PERIODIC
INSPECTION SERVICE

FREE



MAIL THIS
COUPON
TODAY!

OIL IS AMMUNITION • USE IT WISELY

THE NATIONAL REFINING COMPANY
517 Hanna Building • Cleveland, Ohio

We're interested. Send me copies of your Periodic Inspection Reports. No obligation.

Name _____

Title _____

Company _____

Address _____

City _____

State _____

★ NATIONAL EN-AR-CO MOTOR OILS and LUBRICANTS ★



YOUR ^{*} BRAKES ARE AMERICA'S ACCELERATORS

Your brake shop can actually help accelerate American victory . . . and Grey-Rock will help you do it. "Keep 'em rolling," means rolling on the road, not lolling in the shop. Grey-Rock's 3-Point Plan "Keeps 'em rolling," conserves material, money and time. It means less down time . . . more road time. And Grey-Rock Balanced Brake Blocks give greater mileage between re-lines, permit faster schedules which good brakes make safe. Ask your jobber about Grey-Rock's 3-Point Plan. UNITED STATES ASBESTOS DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA.

NOW . . . MORE THAN EVER . . .
DEPEND ON

Grey-Rock

BALANCED BRAKE LININGS
BLOCKS • CLUTCH FACINGS • FAN BELTS • HOSE



TIME IS REALLY MONEY WITH GREY-ROCK'S 3-POINT PLAN



NATIONAL SAFETY COUNCIL STANDARDS
—quickest, correct, safest check on brake
inspection, adjustment and lining jobs.



GREY-ROCK ENGINEERING METHODS — the
expert way to do good brake jobs faster and
better. Every brake is diagrammed in the big
Grey-Rock Service Guide.



GREY-ROCK BALANCED BLOCKS are the
correct nationally-advertised linings worthy
of good service. Famous Vee-Lok Clutch
Facings are best for every vehicle.

(CONTINUED FROM PAGE 60)

lubricating system which costs \$9.00 to replace. Heretofore, this unit was replaced when, due to carbon formation, its efficiency was reduced. Experimental tests recently showed that by removing this unit and placing the small radiator in acid solution most of this carbon will dissolve. We replaced the half-inch line of copper tubing with scrap pieces, soldered to casting. This required one hour labor, a little solder and a few inches

of scrap tubing. The saving amounts to \$8.00 per unit, besides conserving important material such as copper and steel.

Owing to the difficulty in obtaining ignition wiring replacements we buy spools of ignition wire, make all our own ignition connections and soldering each in its proper place.

In the past we always traded our trucks in if and when motors required cylinder reboring. This policy is out now and complete reconditioning will be employed if and when it

becomes necessary to do so. Our trailers have all-metal bodies and we repair these by welding and refinishing broken or damaged parts.

Our management has cut down deliveries to wholesale trade from three to two per week. Our customers are instructed to buy in larger quantities to compensate for this reduction in delivery service as a patriotic measure to save tires, gasoline and oil. No one suffers. Another example of conservation is shown in the matter of rearranging territorial routes.

For example, formerly we sent one unit west on Highway No. 30 and another on No. 33. Now one unit serves both routes with an additional haul of only 20 miles, unless upon occasion the load is too heavy for one unit to carry through.

Under our former maintenance program the average service per unit before trade-in was five years. Under our new program of super checking, salvaging of parts and reduced deliveries we confidently expect to extend this period to eight years.

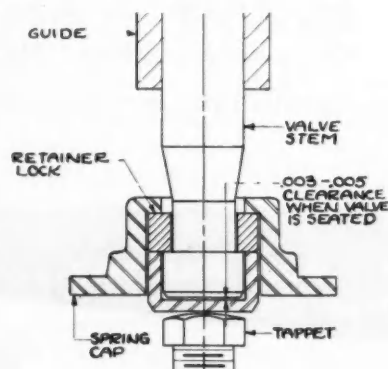
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(Please resume your reading on P. 34)

Thompson "RotoValve"

The "RotoValve" recently introduced by the Thompson Products Inc., Cleveland, Ohio, is designed to prolong exhaust valve life in engines operating under extreme conditions.

A special locking device in the tip permits the valve to rotate slowly in the guide without interfering with normal operation. This device frees the valve stem from the retainer when the valve is opened. Forces inherent in the valve train induce slow rotation, which produces a light lapping action on valve and block seats. Seat and stem deposits are thus removed be-



fore the accumulation at these points can cause blow-by or sticking. In addition, if blow-by does exist due to block distortion, etc., no one point of the valve face is continuously subjected to high temperature gas, preventing local overheating and guttering of the sealing surface.

QUALITY BUILT-IN AT THE FACTORY means long efficient service in your shop—Kellogg has long been known as a manufacturer who makes no compromise in materials, workmanship or inspection in the production of automotive service equipment. Why do we go the limit to maintain this reputation? Not because you care about "quality in a compressor" itself, but because you know this quality means long life, low upkeep, the most you can get for your dollar in such equipment.

PRODUCTION FOR VICTORY
... Kellogg has accepted its responsibility to a fighting America. Currently in production are compressors and special parts and assemblies for the Army, Navy and Air Corps.

Kellogg American
AMERICAN BRASS SHOE & FOUNDRY CO.
KELLOGG DIVISION
ROCHESTER NEW YORK U.S.A.

AIR COMPRESSORS • CAR LIFTS • CAR WASHERS • PAINT SPRAY EQUIPMENT

MASON AND DIXON

(CONTINUED FROM PAGE 27)

truck and semi-trailer must be in good condition before they go on the highway again. The inspectors at the check-in station compare the Accessory Inspection Report of items checked on leaving with the presence or absence and condition of those items on returning. They note road repairs, if any, and accidents causing damage to equipment. They study and check the items indicated on the Driver's Service & Tire Change Report as needing attention.

If repairs are needed, a description of the work to be done is entered on a repair order. Drivers, by the way, are not expected to make repairs on the road, other than change tires, in which case they make appropriate entries in their Tire Change Record.

If no repairs are needed, the tractor and semi-trailer go through the routine preventive maintenance inspection anyway. You might say in such cases we have to look for trouble ourselves, without help or suggestions from driver or inspector at the check-in station.

The following is a check list of procedure:

1. Inspection at check-in station.
2. Shop test before preventive maintenance operations.
3. Steam cleaning.
4. Brake test and adjustment.
5. Wheel, rim and tire inspection.
6. Steering gear inspection.
7. Electrical test throughout.
8. Chassis inspection.
9. Motor tune-up.
10. Complete lubrication and grease job.
11. Shop test after preventive maintenance operations.

Each of these operations is handled by a specialist, or a group of specialists. We don't ordinarily hire specialists as such. Most of our shop employees are "imported" because there are no similar shops within many miles. When we hire a new man we "put him through the shop" to find at what kind of work he excels, or is so interested that he takes the trouble to learn all he can about it. As quickly as there is an opening for that sort of specialist, we give him a chance to show what he can do. Actually, most of our men are good all-around mechanics who are

extra good at certain jobs, and are customarily assigned to such work. One beauty of having crews of specialists is that they demand special tools for their work and use these tools intelligently. Our shops are equipped with most tools necessary to keep trucks operating efficiently.

Up to this point we have indicated how a truck returning to the home base is checked for necessary repairs. After this inspection and before any work is done each piece of equipment is thoroughly cleaned.

Ours is a steam cleaning process in which we use a big boiler that supplies ample steam for a steam cleaner of our own invention and make. We also have a high-pressure unit for removing old paint with stripping solution. For this work we also use the steam cleaner and steam solution vats.

The steam unit consists of a high pressure boiler, developing a 125-lb. working pressure, to which are connected vats large enough to take an

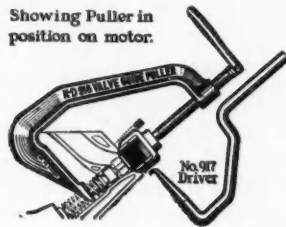
(TURN TO PAGE 68, PLEASE)

LOOK INTO YOUR TOOLBOX-

Is it equipped to service Ford Valves-profitably?

**The K-D 920 Valve Guide Puller Set Services
FORD 85 • MERCURY • LINCOLN-ZEPHYR • TRACTOR • 4 CYL.**

Showing Puller in position on motor.



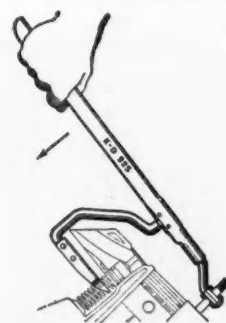
Pulling "frozen" valve guide assemblies from Ford-built motors is almost impossible without the right tools. The K-D 920 Set does a bang-up job, no matter how tightly the guides are stuck. With a few hammer blows the 917 Driver removes the retainers. After that, with the jaw of the 918 Puller under the guides and the pressure cup around valve head, a few turns on the screw handle pulls the most stubborn guides up and out. It's a tough, reliable outfit. Drop-forgings and tool steel for long, dependable service. (This set will not service Ford 60 H. P. See the K-D 860 for that job.)

NEW • ADAPTOR for 920 Set to Service FORD 6

In the new Ford 6 the intake valve heads are larger than the exhaust and this 923 ADAPTOR must be used to provide clearance for these larger heads. The Adaptor is *not* furnished with the 920 Set. It must be ordered separately.



K-D 925 is the RIGHT Tool for Replacing Assemblies



The K-D 925 Replacing Tool will service all Ford-built motors except 60 H. P. It was designed for motors on which a bar-type lifter could not be used. These are Lincoln-Zephyr, Ford 6 cyl., Ford 4 cyl. and Ford Tractor... but it works just as well on the others. *It is a well-built tool but is not to be used for removing valve guide assemblies.* Engaged on a head stud with jaw in grooves at bottom of guides, a downward pressure on handle pulls assembly down permitting installation of retainer.

These are only a few of more than 60 K-D Tools. See and price them at your Jobbers. Or write for new free Catalog.



K-D TOOLS... "THE HUSTLERS FOR YOUR TOOLBOX"

K-D MFG. CO.

Lancaster, Pa.

Hamilton, Ont.

(CONTINUED FROM PAGE 67)

entire engine, a separate vat for small parts and a vat for radiators. After cleaning, we use live steam at boiler pressure to blow off excess water or dirt and dry the part.

No crank cases, transmissions, rear ends or other parts are overhauled by a mechanic until they are thoroughly clean, inside and out. Why expect a mechanic to do a good job when he has to work in a lot of muck?

Sure, we waste some oil and grease

down the sewer by cleaning units thoroughly, but our policy is to use new oil and grease. We don't reclaim crankcase drainings. In each tractor and truck cab we keep a card on which oil change dates and oil change mileages are recorded, as well as filter change mileages. Oil is changed every 1500 miles and the filter cartridge is changed every 5000 miles.

In the preventive maintenance shop there are wheel bearing record cards on which we keep track of when to

pack wheel bearings, as well as the mileage between packings. All wheel bearings must be repacked at 10,000 mile intervals. Here, too, we don't merely smear a little new grease over the old muck in the bearings. We take out each bearing, clean out the old grease thoroughly, inspect the bearing, and repack it only if it is in first class condition. Our wheel bearing repacker is of an improved type and forces grease into a bearing so that every nook and cranny is filled solidly with grease.

Routine greasing of a chassis is quickly and efficiently done, because everything is clean underneath.

When a tractor, truck or semi-trailer comes into the preventive maintenance shop, certain of our men inspect the wheels, rims and tires. If the tires need attention they go to our tire shop where we are equipped to make all repairs. If the tires show evidence of shimmy, misalignment, or need of front wheel or steering gear adjustment, that fact is reported to men assigned to such work.

We use as one of our important maintenance tools a heavy duty type front-end alignment machine and wheel balancer. This machine corrects all alignments, including wrecked equipment, as well. All work is straightened and relined without heating. This machine is particularly useful in preventing needless tire wear due to wheel or axle defects and we consider it highly important in view of the present rubber situation.

For preventive tire maintenance we keep a careful record on the life of each tire, where it was used, what mileage it gave, what the repair costs were, etc.

Tire records are facilitated by our branding system in which we use an electric coding iron and a series of low numbers other than the manufacturers' serial number for our own recording and prevention of theft. File cards are kept with corresponding numbers containing the history of each tire. Every time a tire is changed, a report is made on the daily tire change record and the information is later entered on the master tire mileage record.

This just about takes care of our preventive maintenance routine, and now we come to our major repair and rebuilding departments. No matter how carefully they are maintained,

(TURN TO PAGE 70, PLEASE)



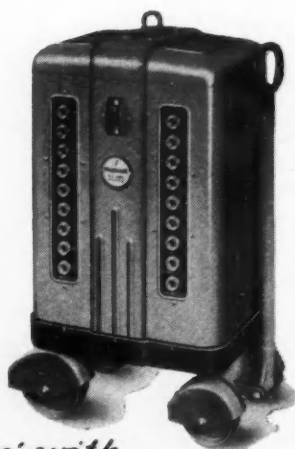
ENLIST MARQUETTE'S MINUTEMAN of 1942



Here's your protection against the schedule shattering delays of excessive lay-up time.

Worn or broken chassis members and body parts, cracked engine blocks and cylinder heads and a host of other repairs can all be electric welded at amazing savings in time and money. No waiting for "hard-to-get" spare parts.

You never know when a breakdown may put an important fleet unit into the shop for repairs . . . but you can depend on a versatile MARQUETTE A.C. ARC WELDER to get it back on the road faster and cheaper than any other method.



BUY THE BEST . . . BUY MARQUETTE

- Low initial cost • Low operating cost
- No moving parts to wear out, no dials or gadgets to get out of order • Operating savings up to 30% over comparable D.C. machines and 50% over gas • Nine models ranging from 125 to 400 amperes • All models fully equipped

—Listed by Underwriters' Laboratories, Inc.
Send for free, 24 page, illustrated booklet.
MARQUETTE MFG. CO., INC., MINNEAPOLIS, MINN.

Keep 'em Rollin' with

MARQUETTE

REG. U.S. PAT. OFF.

A.C. ARC WELDERS



Ewing-Galloway

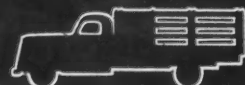
THE RIGHT BRAKE LINING

FOR EACH TRUCK, EACH JOB, WITH AMERICAN BRAKEBLOK'S ADVISORY SERVICE

Operators of trucks in city delivery service, in long distance hauling and in every kind of use, report improved brake maintenance and lowered costs after using American Brakeblok's free Brake Lining Advisory Service. Our engineers are available to help you on brake maintenance. Simply ask your American Brakeblok representative to fill in an Advisory Service form for your fleet, or write us.



1 American Brakeblok "Regular" Brake Lining for manually operated braking systems.



2 American Brakeblok "1000 Series" Brake Lining for vacuum-boosted braking systems.



3 American Brakeblok "2000 Series" and Thick Blocks for airbrake equipment.

**American
Brakeblok**
BRAKE LINING

Master stocks in 38 NAPA Warehouses.
Jobbers everywhere give prompt service.



American Brakeblok Division of The American Brake Shoe & Foundry Company, Detroit, Michigan



"I'm American Brakeblok's Stopper the pup, telling the world in national magazines that good brakes are important."

(CONTINUED FROM PAGE 68)

trucks, tractors and semi-trailers will wear out, break down and sometimes get wrecked.

When a piece of over-the-road equipment does break down, and the trouble is such that it cannot be corrected promptly either by the driver and his helper, or at some nearby garage, the driver phones our nearest mechanic or branch shop and the person receiving the call immediately fills in a Road Call and Trouble Report. This report gives the important

facts and includes the later report of the mechanic who is sent to the waiting equipment to make emergency repairs. Fortunately, we don't have a great deal of this emergency work to do and a truck or tractor can usually come in under its own power. The decision to operate a truck after a breakdown is left up to the driver, provided a mechanic is not dispatched to the scene.

When the preventive maintenance shop tester or inspector reports the need for major repairs, the procedure

is as follows: First the equipment is steam cleaned. Then, depending upon what the repair order calls for, it goes to the unit shop or the body shop. Suppose the motor needs overhauling. We remove that motor and install a rebuilt motor immediately. The same thing is done with clutches, transmissions, differentials, steering gears, carburetors, governors, etc. We never hold a piece of equipment out of service to repair units. We simply replace those units and rebuild the defective ones so they will be ready for future replacements.

Engines are rebuilt completely, a record being kept of the sizes to which cylinders are rebored, and of any other changes which differentiate that particular rebuilt motor from a new one. Each rebuilt motor is carefully tested. We have an old frame, complete with drive shaft, but the shaft turns a paddle fan in a protecting housing instead of turning rear wheels against a measured friction. The paddles of the fan are adjustable in and out on radial arms to give varying degrees of air friction. Our Engine Test Record card contains a record of the motor performance factors we need after the rebuilt motor is set in the testing frame and hooked up to the drive shaft. The final run-in is done with the throttle wide open, pulling in overdrive against a heavy load at a road speed equivalent to 18 m.p.h. in r.p.m.

Motors which pass their tests are then thoroughly cleaned and spray painted. We keep eight to ten rebuilt motors on hand at all times, as well as two or three new motors of each of the types we use.

Our equipment for work on motors, including motor tune-ups, is rather complete, with three valve refacers, boring bars, grinders, portable cranes, lathes, drill presses, three gas analyzers and other necessary tools.

Whenever transmissions or rear ends are to be rebuilt, we give each tooth of each gear a minute examination, preferring to discard a defective gear before it wrecks the gear into which it meshes. In our kind of work we feel that a gear should be a lot better than "just good enough" before it goes back into a rebuilt unit.

Our electrical departments, both for rebuilding and preventive maintenance, are equipped to rewind armatures and field coils, turn and recut

(TURN TO PAGE 72, PLEASE)

LUBER-FINER
USERS
help

KEEP 'EM FLYING

KEEP 'EM SAILING

KEEP 'EM ROLLING

★ Here's how you can conserve our vital oil supply for planes, ships, tanks and trucks:

Install Luber-finer, a *genuine oil refiner*, on your motor. With refining packs replaced at proper intervals it saves unnecessary oil drains, costly repair bills and adds thousands of miles to oil and engine life.

Letters in our files indicate that Luber-finer users drive from 15,000 to 100,000 miles between crankcase drains. The oil thus saved is made available for our fighting forces.

Save Oil FOR DEFENSE, MONEY FOR YOU!



There's a Luber-finer for every type of engine and every type of oil.



REFINES OIL EVERY MILE AS YOU DRIVE

Write for descriptive technical bulletin

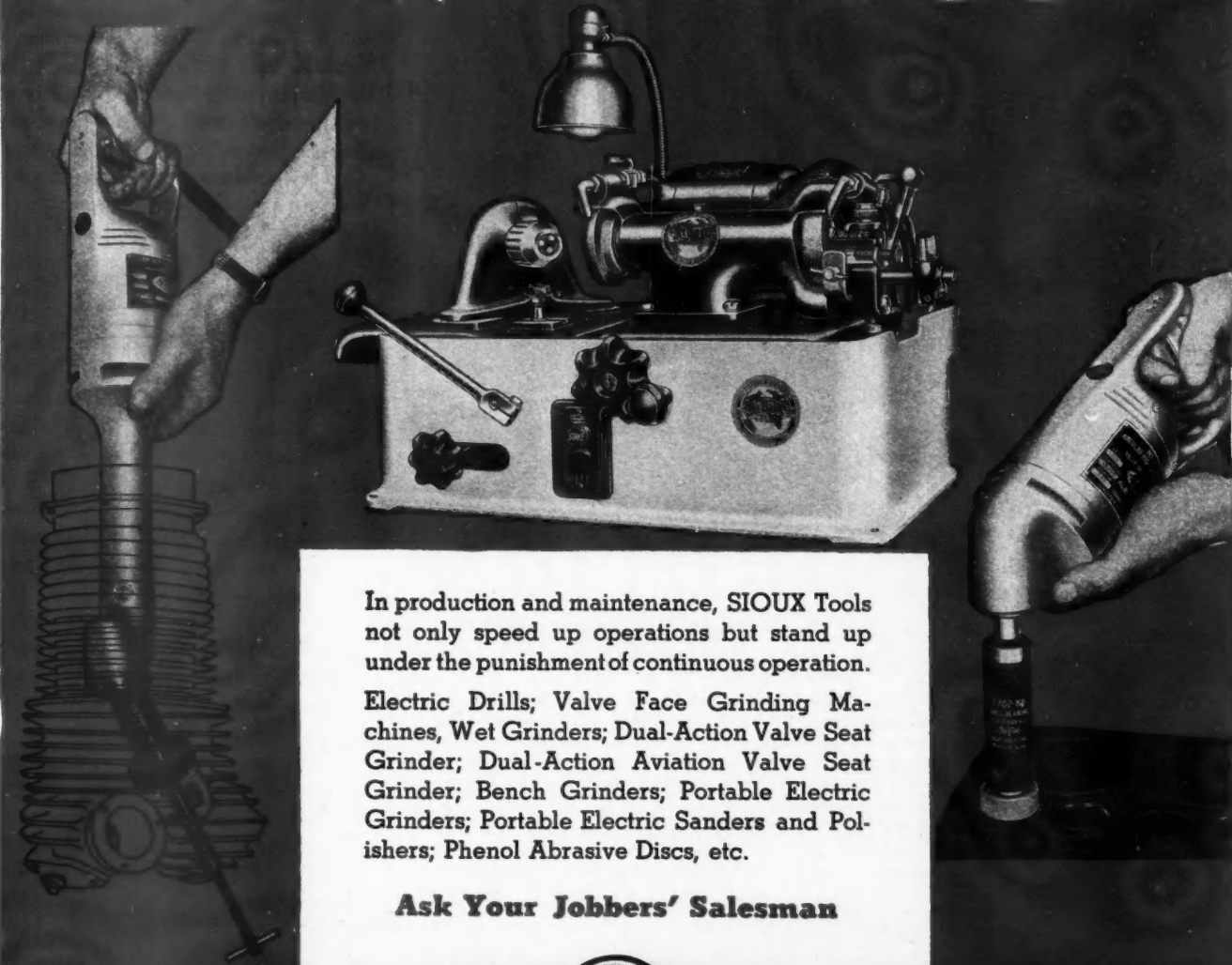
LUBER-FINER INC., LOS ANGELES

Keep 'em Pur-r-r-ring



for Victory...

WITH SIOUX TOOLS



In production and maintenance, SIOUX Tools not only speed up operations but stand up under the punishment of continuous operation.

Electric Drills; Valve Face Grinding Machines; Wet Grinders; Dual-Action Valve Seat Grinder; Dual-Action Aviation Valve Seat Grinder; Bench Grinders; Portable Electric Grinders; Portable Electric Sanders and Polishers; Phenol Abrasive Discs, etc.

Ask Your Jobbers' Salesman

STANDARD THE

ALBERTSON & CO., INC.



WORLD OVER

SIOUX CITY, IOWA, U. S. A.

(CONTINUED FROM PAGE 70)

commutators, and do all of our own repair, rebuilding and testing.

There is so much night driving that batteries get run down. We check batteries after each trip. Batteries that don't test up to standard are torn down and rebuilt.

The battery check includes checking voltage, gravity, water level, case cracks, damage and bad connections. If faulty, the battery is exchanged for a rebuilt one and the old unit goes to the repair department. A few months

ago we started accumulating repair parts for rebuilding batteries and as long as this stock lasts we will be able to maintain our present repair schedules.

No important repairs are ever made to carburetors while they are attached to motors in the shop. We install a rebuilt carburetor. The same applies to governors, etc.

In an earlier part of this account mention was made that equipment sometimes gets wrecked. In order to keep a separate accounting of the re-

pair costs incurred as a result of wrecks, we keep a monthly Accident Report Cost Sheet on which we enter all of our costs in connection with the damaged equipment. This sheet is a recapitulation of dates of wrecks, equipment involved, drivers, where the wreck happened, the nature of the wreck, the time of day it happened, material, parts and labor costs of repairing, the cost of going after the wrecked equipment, etc.

An important part of our self-sufficient maintenance and repair operations is our body shop. Here we make all repairs and rebuild bodies.

Where semi-trailer bodies have to be trued back into shape, we have pillar jacks that help us do the job fast. In fact, we have all the body and fender tools that anyone could possibly need to smooth out dents in the side of a semi-trailer; take the accordion pleats out of a fender, rebuild a cab, or what have you.

We are fussy about such minor items as door hinges, window lifts, hood clamps and miscellaneous squeaks and rattles. We don't like such annoying noises in our own cars and we don't think our drivers should have to listen to them all day long. The few minutes spent to make and keep a cab quiet are well spent.

Trailer maintenance requires specially trained men and special tools. Troubles and preventive maintenance are closely connected. Alignment of semi-trailer chassis and bodies is important for reasons of safety, excessive wear on tires, equalization of brakes, proper spring suspension, taking undue stresses out of body supporting members, etc. We make repairs in whatever measure necessary to put trailers back into operation and in some cases changes are necessary from the original design to prevent recurrence of troubles. We find it hard to draw the line between preventive trailer maintenance and changes made necessary because of the peculiarities of our operation.

When a piece of over-the-road equipment has gone through our Kingsport shops it is thoroughly tested, particular attention being paid to those items which the driver has listed for repairs, or which the check-in inspector reported as needing attention. Only after equipment has passed this final test is it returned to service. This, however, is not the only inspection it receives before it
(TURN TO PAGE 74, PLEASE)



Speeding

PRODUCTION

Dependable Continental Red Seal Engines are the backbone of all kinds of jobs

The dependable power of these famous Red Seal Engines is not limited to airplanes, tanks, trucks, buses, agricultural machinery, oil field equipment and "jeeps." No, indeed! Continental Red Seal Power surges forth from thousands upon thousands of industrial engines to operate compressors — mixers — pumps — conveyors — generators — excavators — graders — grinders — hoists — mills — crushers — mining machinery — road-building and road-maintenance, etc.

In fact, there are more than 60 individual and prominent applications — each depending on the precise engineering and high quality production that for more than 40 years of fine engine building have spotlighted the slogan — AMERICA'S STANDARD.



Continental Motors Corporation

MUSKEGON, MICHIGAN U.S.A.

Ammunition of War **for the home front!**

Today there is but one goal for the men and machines of America: *Production and still more production!*

As raw materials roll in and the finished sinews of war roll out in an ever increasing flood, transportation faces its biggest test. No need to tell transportation men the seriousness of the situation. With the manufacture and sale of new vehicles restricted, existing trucks and trailers have *got* to stand up!

And if they've got to stand up, how about replacement parts? They're also ammunition of war—for the home front!

Forward-looking Timken, with the finest research and manufacturing facilities in the industry, is helping win the war on the home front not only with time-proved, quality-controlled original equipment

parts, but also with a complete program for proper A. M. (Axle Maintenance).

Practicing good A. M. and using Timken original equipment parts is one of the best ways of all to keep your equipment rolling for VICTORY. It will pay you—in more mileage and longer, more dependable service—to insist on genuine Timken parts and to practice proper A. M. Write us for complete information on how we can help you.

TIMKEN AXLES

THE TIMKEN-DETROIT AXLE CO., DETROIT, MICH.
WISCONSIN AXLE DIVISION, OSHKOSH, WISCONSIN

Timken's Job: To Axe the Axis with Axles

A. M. (Axle Maintenance) KEEPS 'EM ROLLING



(CONTINUED FROM PAGE 72)

goes out on the highway. Before the driver gets in the cab the inspector at the check-out station gives all safety items a thorough going over. And before the driver leaves on a trip he inspects the equipment to make sure that it is in good condition. It is his duty to refuse to drive equipment that he believes will be unsafe on the road.

Such a situation is rare because many drivers make it a practice to visit the shops when off duty and par-

ticularly when their own equipment is being worked on. Here they ask questions, describe symptoms, show the mechanics just what they mean about this or that item, and then see for themselves that the work is being done properly. We're glad to have driver-visitors. After all, they're the men whose safety depends on the kind of work we do.

When the mechanical work is done on a tractor, truck or semi-trailer body, we send it to our paint shop, where we are equipped to turn out

spray and brush work, as well as truck signs and all other painted signs for our various terminals and agency offices.

When a vehicle leaves the paint shop, assuming it was scheduled for the paint shop after leaving the repair department, the operating department is notified that the unit is ready for road service.

Considerable emphasis is placed on safety in our shops. Our transportation and safety departments, under the direction of I. N. Taylor and W. D. McLain, see to it that drivers are well trained and that dangerous highway conditions are promptly reported. Two safety cars are on duty 24 hours a day, covering all our operating routes, and turning in observation reports on road conditions. It depends on circumstances as to whether drivers are rerouted or merely warned about bad roads.

We belong to the National Safety Council and use their warning signs, and we also provide every means we know of to make it unnecessary for our shop men to take chances. For instance, we don't ask our mechanics to work under equipment that is supported on jacks; we have any quantity of steel supports of various heights that can't lower accidentally.

Transmission jacks must be used whenever a transmission is removed or installed. Goggles are provided wherever grinding is done or chips are likely to be flying. Respirators are provided for the spray painters. Our policy is to buy or make exactly the tools for each job by which that job can be done most efficiently and safely, having found that makeshift tools and methods are frequent causes of accidents. Another reason why our safety record is excellent is because our men are working on the same units or doing the same sort of work all the time. They are specialists and they know what to do and what not to do to avoid accidents.

END

(Please resume your reading on P. 28)

For Maintenance V Sing

General Motors has given the name of Victory Maintenance to its enlarged truck maintenance program recently inaugurated. The two additional features now supplementing the company's preventive maintenance plan originated in 1928, is a group overhaul plan which will be of particular importance to light truck operators. Another feature is the offer of complete or partial engine assemblies for replacement.

Snap-on Tools

-for top speed
on spring tune-ups



Speed counts today as never before . . . *but so does quality!* Motors must be kept tuned to top efficiency! Every service job carries added responsibility to "keep 'em rolling" . . . wastelessly . . . for thousands of added miles!

That's why, throughout the service industry, Snap-on tools in capable hands are riding higher than ever! Snap-on speed design in tools for every job make a definite, measurable difference in *time* and in *results*. And everywhere good mechanics are quick to tell you so! See your Snap-on salesman, or write for catalog.



No. 63-B Midget wrench set



No. C-10K Ignition wrench set

No. MT-26-B Tune-up set



The distribution of many of our tools is governed by priority demands and we may in some instances be unable to supply certain items.

SNAP-ON TOOLS CORPORATION
8026-E 28th Avenue Kenosha, Wisconsin



FIGURING EFFICIENCY

(CONTINUED FROM PAGE 37)

outlets, and embrace mainly the operating effectiveness of the delivery units in this type of service.

The same principles of control are employed in both types of operation. Approaching the discussion of this type of service from a primary standpoint of single warehouse distribution, it may be said that the extent of the economic delivery range is determined by the spread between manufacturer's cost and selling price to the limit approved by management.

Distributing areas around each of a successive group of warehouse points may be determined mathematically, having their limits set by formulas determined through the use of cost-per-unit mile factors, whether these units are in lb., cwt., tons, bbl., gal., cases, etc.

To determine these factors the following costs should be procured:

1. The variable cost per mile.
2. The fixed cost per hour.

It is debatable what costs of truck operation comprise the variable expense and likewise what costs comprise the fixed. Let us assume for all practical purposes the following:

Variable Expense: Gasoline, oil and grease, tires, and chassis repairs.

Fixed Expense: Body repairs, depreciation, insurance, general expense, and license.

The total dollars of variable expense divided by miles run indicates cost/mile variable.

The total dollars of fixed expense divided by yearly hours assigned indicates cost/hr. fixed.

In order to determine the cost per unit mile, the fixed cost-per-hour is first converted into cost-per-mile by dividing the fixed cost-per-hour by the average vehicle speed.

Assuming the variable cost at 5.0c. per mile.

Assuming the fixed cost at 200.0c. per hour.

Assuming the average road speed at 20 m.p.h.

Then by conversion fixed cost would be 10.0c. per mile—added to the variable cost of 5.0c. per mile, or 15.0c. total per mile.

In the instance of the truck's load capacity of 100 cwt., the cost per cwt./mile would be \$.15/100 or \$.0015.

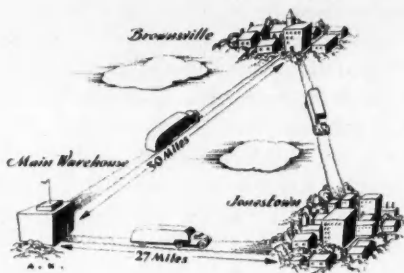


Fig. 1. Illustrating cost per unit mile problem discussed in the article

To illustrate the use of the cost-per-unit mile let us confront a problem to be solved. From a main warehouse point there are two other warehouses. One is at Brownsville, 30 miles away, and is stocked with goods at \$.05 per cwt. Another at Jonestown, 27 miles away, is stocked with goods at \$.04 per cwt. Brownsville and Jonestown have delivery trucks with rates of \$.0020/cwt. mile. This is illustrated at left.

(TURN TO PAGE 78, PLEASE)

Speedaway

"it follows like a shadow"

RUNNING GEAR

for

4 WHEEL TRAILERS

for

SEARCHLIGHT TRAILERS
ELECTRIC GENERATORS
FIRE PUMPS
AIR COMPRESSORS
ELECTRIC WELDERS
CONCRETE MIXERS
ROAD MACHINERY
PORTABLE TANKS
UTILITY TRAILERS
ETC.



Now you can revise all your present ideas about 4 wheel trailers.

This Speedaway trailer with automotive type steering travels at high speed under heavy load without the tendency to "weave" or "shimmy."

One experienced trucker remarked upon first towing a Speedaway—"it follows like a shadow."

Correctly designed springs absorb the jar of rough roads and the vibration of running machinery, without excessive bounce or side sway.

Eberhard wheels in standard sizes are available and spring centers can be furnished for your frame width.

Units are available for total loads of 5000, 7000 and 10000 pounds.

Write for Wheel and Axle Division
Catalog No. 134.

EBERHARD

MANUFACTURING CO.

DIVISION OF

THE EASTERN MALLEABLE IRON CO. • CLEVELAND, O.



(CONTINUED FROM PAGE 77)

The first portion of the problem is:

How far from the main warehouse may the \$.0015 truck operate towards Brownsville until the cost of delivery outward is equal to the freight rate of \$.05 per cwt. plus the cost of delivery by the \$.0020 truck inward to the point of cost equality.

The solution is as follows: \$.05/\$.0015 = 33.3 miles. Return miles are included in these cases, therefore the point where the freight cost is

absorbed is 33.3 or 16.7 miles out from the main warehouse. At this point the goods in the truck have a unit transportation cost equal to the unit freight cost at Brownsville. Having a \$.0015 rate truck at this point and a \$.0020 rate truck at Brownsville, the remaining miles to Brownsville will be divided proportionately with the rates of the competing trucks, namely:

$$\begin{array}{r} \$.0015 \\ .0020 \text{ or } 20 \times 13.3 = 7.6 \text{ miles} \\ \hline \$.0035 \quad 35 \end{array}$$

Then 16.7 miles plus 7.6 miles = 24.3 miles, which should be the extreme point of division between the main warehouse and Brownsville.

Proving the point:

$$\begin{array}{r} 24.3 \text{ Out} \\ 2 \\ \hline 48.6 \text{ Total Miles Out} \\ \$.0015 \\ \hline \$.07290 \text{ Cost per Cwt.} \\ 5.7 \text{ Miles In} \\ 2 \\ \hline 11.4 \text{ Total Miles In} \\ \$.0020 \\ \hline .02280 \\ .05 \text{ Added Freight Rate} \\ \hline \$.07280 \text{ Cost per Cwt.} \end{array}$$

The division between the main warehouse and Jonestown is obtained in like manner. The division between Brownsville and Jonestown points is obtained by first absorbing the difference in their rates by the truck operating from the cheaper point and then equally dividing the remaining miles, thus establishing the delivery limit between them. With the delivery areas economically established, we now arrive at the point where routing delivery service is built for each individual warehouse point.

There are three systems of delivery applicable from a given storage point. These are: (1) The route system of regular days based on positive schedules; (2) The flexible route system nominally called *route dispatch* which absorbs spot orders; (3) A *dispatch* system which places all deliveries on an order basis.

Prior to the detail construction of routes, volume must be determined by a daily or weekly period. Additional preparatory measures should be taken, such as:

1. Obtain largest sized truck available to suit needs.
2. Attempt day and night delivery to as great an extent as possible.
3. Establish through sales division an educational program to:
 - a. Buy largest possible quantity.
 - b. Maintain high storage capacities for full load deliveries if possible.
 - c. Establish as many first rate credit conditions as possible.

A work sheet properly ruled and lined should be selected to accumulate customers' names and addresses. If the section being studied embraces only urban territory, their street addresses would be sufficient.

(TURN TO PAGE 80, PLEASE)

ARROW SAFETY DEVICES

help light the way to

VICTORY

Through the long dark hours, the truckers of America are pounding the highways . . . delivering vital materials of war to a safe, quick destination. Every truck available is being pushed into service. Every effort must be made to "keep 'em rolling" safely.

Proper lighting is vitally important. ARROW Marker Lamps, Turn Signals, Reflectors and Sealed Beam Head Lamps are helping to speed up schedules and keep 'em safe. All ARROW Safety Devices are built to stand up under today's tough requirements and keep maintenance costs at a minimum. The price is right, too! See your jobber or address Dept. 126.



SEALED BEAM HEAD LAMPS



STOP LIGHTS



ADJUSTABLE MIRRORS



MARKER LAMPS AND TURN SIGNALS



CLEARANCE LAMPS



OIL & ELECTRIC FLARES



PLASTIC REFLECTORS

ARROW SAFETY DEVICE CO., Inc.

MEDFORD, NEW JERSEY

Power from Grand Coulee Dam

MARGIN of SAFETY

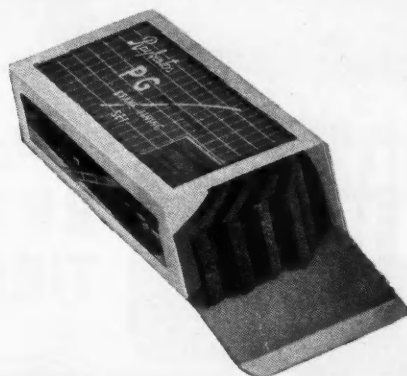
for 230,000 VOLTS!

Hundreds of miles of transmission lines . . . carrying 230,000 volts from Grand Coulee Dam to the Pacific Northwest . . . *safely*, because the equipment is engineered with a *margin of safety*, beyond maximum calculable needs.

Raybestos Heavy Duty Brake Lining is also built with a *margin of safety*, the same margin customarily allowed for in the greatest engineering projects—300 percent! For example, Raybestos Heavy Duty Brake Lining will stop a 5 ton truck carrying a 20 ton load—*safely*. That's stopping power!

For today's vital transportation job, let your trucks have the advantage of Raybestos' *margin of safety* performance.

THE RAYBESTOS DIVISION of Raybestos-Manhattan, Inc. BRIDGEPORT, CONN.



Raybestos

AMERICA'S BIGGEST SELLING
BRAKE LINING

YOUR 2
BEST FRIENDS
for
HIGHWAY
SAFETY



BRAKE LINING, CLUTCH FACINGS, FAN BELTS, HOSE • FOR CARS, TRUCKS, BUSES, TRACTORS • ON THE WAR AND CIVILIAN FRONTS

(CONTINUED FROM PAGE 78)

Cities may be divided into sections according to volume.

A captioned column should contain the monthly volume of sales for each outlet. This figure is then reduced to a single day's delivery requirement and the day of service selected. Days of service are allotted each account and should be so grouped by towns or urban sections to minimize miles.

The sequence of delivery is then built up and the units of delivery ac-

cumulated successively until a full load is accounted for, following which miles run should be determined. A practical method for the measurement of miles is by use of a large scale map, and a standard map measure wheel, which measures in inches and is converted to miles through the use of the map's "scale of miles." Each day's work is accumulated in loads, miles and delivery stops.

By the use of estimates at the beginning, and later through the use of

time studies, standards may be provided for each operation to cover:

1. Plant or warehouse time, and loading
2. Average rate of speed in m.p.h.
3. Customer contact time.
4. Unloading time per unit.
5. Report time.

Hours are thus accumulated and the proposed load for the day increased or decreased to fit the normal length of shift time. By this measured method of routing, a high degree of efficiency may be obtained. If a sufficient number of accounts are so adjacently grouped and a standard regularity in daily service maintained, a monthly check-up on performance is ample. This type of check-up is adequate to cover regularly prescribed deliveries on fixed routes.

The same method of measurement may be employed to check on the operation of the flexible route system which absorbs spot orders.

All the factors of operation from total loads, hours worked, miles run, units sold, deliveries made, to the final report of the day can be scaled in time on card measuring devices of your selection. By pyramiding each card measurement of activity on the other, a total number of standard hours is revealed by use of the scale (in-hours-to-the-inch) \times (the-number-of-inches-the-cards-cover).



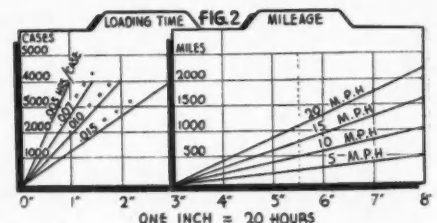
WEAVER TRUCK & BUS WHEEL DOLLY

The Weaver Wheel Dolly is sturdily built to handle wheels weighing up to 1200 lbs. Screw jack raises wheel to exact height. Casters permit moving wheel to work bench and back. Write for complete information to:

SPEEDS UP BRAKE AND TIRE SERVICE

During the next months you'll be pulling more wheels for tire and brake service than ever before. And the chances are that you can't afford to have two or three men spending hours to lift them. The answer lies in the new Weaver Truck and Bus Wheel Dolly for removing, transporting and replacing heavy single and dual wheels. Allows one man to do the entire job.

Weaver Manufacturing Co. SPRINGFIELD, ILLINOIS



Two cards from such a method now employed are shown in Fig. 2.

On these cards, the horizontal scale of the measuring device used is based on units of 20 hours to the inch. Average speeds according to the type of vehicle and territory covered, and loading time in hours per case are shown.

An example revealing the time consumed in loading 4000 cases at the rate of .015 hours per case, together with the time required to run 500 miles at an average speed of 10 miles per hour is shown. By measuring the number of inches on the full scale chart between the beginning of the operation and the end, we obtained full time consumed—in this case, 5.5 inches or 110 hours. The hours indicated by the standard (TURN TO PAGE 82, PLEASE)



FOUNDED ON QUALITY

Extra *quality* and *stamina* are built into Willard Commercial Batteries. Thick, heavy plates, strong, rugged containers, ample sediment space and rigid specifications as to material and workmanship give them the ability to stay on the job . . . give them the power to carry on.

Exclusive "Safety-Fill" construction guards against destructive acid-spray—prevents clogging of vents.

Write for complete specifications.

Willard

SAFETY-FILL

COMMERCIAL BATTERIES

•have the power to carry on!

WILLARD STORAGE BATTERY CO. • CLEVELAND, LOS ANGELES, DALLAS, TORONTO

(CONTINUED FROM PAGE 80)

times 100 divided by the actual hours absorbed in performing the required work will give an indication of the efficiency in percentage of the operation.

This type of planning points toward high efficiency. It demands attention be given to all individual factors, the collection of which data permits accumulated detail to be used effectively.

Another method of checking activity is to convert each standard fac-

tor into a multiplier and deduce hours accordingly by application of the individual multiplier to the totals of all items of delivery mentioned above. The amount of the measured hours based on standards, compared to the reported hours, establishes a ratio of effectiveness.

This latter use of the standards is better adapted to measuring a single day's work or individual trip, and is less subject to error than the first method. It is better suited to measure the results of the dispatch system.

The use of these forms, principles, standards, and rates, supplemented with time studies conducted periodically have for their ultimate end effective performance in delivery. When effective performance in delivery is attained, profits are maintained and this matter is your vital goal as a private operator.

END

(Please resume your reading on P. 38)

GET IN THE SCRAP

(CONTINUED FROM PAGE 40)

mats; bundle up the wool and cotton, the burlap and even paper and cardboard and sell, sell, sell!

"Add to this scrap selling campaign a program of lengthening the life of every part, accessory, tire, tube and machine you now use, through greater care, preventive maintenance and constant vigilance and you will be further serving America by lessening the need of replacement parts and equipment and serving your business by decreasing your costs.

"To effectuate this plan in your business, you are asked by your government to act TODAY by:

"1. Appointing an alert member of your executive staff to see that all scrap and unneeded machines, parts and equipment are moved at once into your regular second-hand and scrap channels.

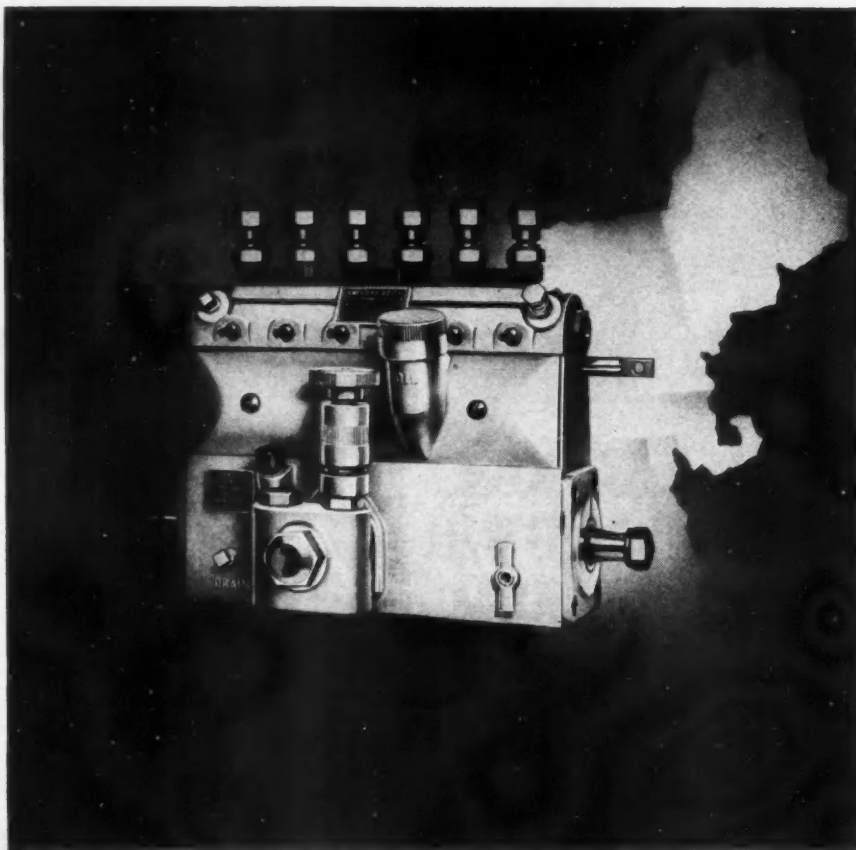
"2. By reporting to either the Transportation Division of the Industrial Salvage Section of the War Production Board or to your own transportation association what you have scrapped and sold and the name of your dealer, so that he may be followed up at once to see that it goes to where it is needed most.

"3. By setting up a program to enlist every employee's cooperation and to keep this scrap moving plan functioning constantly 100 per cent. Scrap bins, boxes and barrels, plainly marked with the slogan 'Scrap for Victory' will help.

"The government is doing industry a favor. In my own business, we have already cashed in hundreds of dollars in scrap and we have sold several thousand dollars worth of unneeded parts and equipment and that is good business as well as good patriotism."

END

(Please resume your reading on P. 42)



AMERICAN BOSCH DIESEL INJECTION EQUIPMENT

AMERICAN BOSCH CORPORATION SPRINGFIELD, MASS.
BRANCHES: NEW YORK, CLEVELAND, DETROIT, CHICAGO, SAN FRANCISCO





Facts and Flashes

From the
Truck, Bus and Fleet Division
ETHYL CORPORATION

FOR THE WARTIME BUS, TRUCK AND FLEET OPERATOR

1600 West Eight Mile Road
DETROIT, Michigan

Largest fleet operator in the country today is the United States Army. For general maintenance work the Army needs skilled mechanics. Many must come from truck and bus maintenance shops. Wise fleet operators are rushing the training of replacements, concentrating on older men less likely to be called.

Lower-octane fuels are providing a real problem for many operators today. Hope is that octane number of regular gasoline will not go below present average, but future is uncertain. Vast demand for high-octane gasoline components for aviation fuels has caused both lowering of octane rating and variations in volatility of commercial gasolines. Ignition timing and carburetor should be adjusted for fuels available.

Realization of the tremendous job trucks and buses are doing should bring recognition of the need for replacement parts. However, every effort should be made to conserve equipment by proper handling and maintenance, and whenever possible to repair parts rather than replace them.

Bright spot in the gasoline picture is the enlarged plant capacity of Ethyl. New plant was completed a year before Pearl Harbor. Indications are that all war needs can be met and still have antiknock fluid available for the cars, trucks and buses of our national transportation system.

Warning to operators or dealers who must store equipment: Be sure gasoline tanks and fuel systems are completely drained of all gasoline. Fuel left in tanks over period of months will form gum and cause serious troubles.

Information and advice on engine maintenance is offered by Ethyl fleet engineers. Operators are invited to call on them for help. Write to Ethyl at the above address for free booklet—"Practical Pointers on Engine Maintenance."

"Oil is ammunition—use it wisely!"

ODT MAINTENANCE

(CONTINUED FROM PAGE 38)

to prolong truck life and conserve gasoline, parts, and tires. In order to do this, the truck must have special maintenance attention, and the booklet is a handy guide to a definite plan.

Factors of maintenance control and procedure, the third item, contemplates the issuance and follow-up through established professional tech-

nical societies and associations of suggestions relative to important maintenance techniques and procedures such as standard maintenance instructions, unit replacement control, frequency of mechanical failures, reclaiming methods, etc.

At present a number of these projects are being studied by the Society of Automotive Engineers' Transportation and Maintenance Activity. The work on the first of these projects, "Standard Practice Instructions," has progressed to the point that the fol-

lowing high spots have been determined:

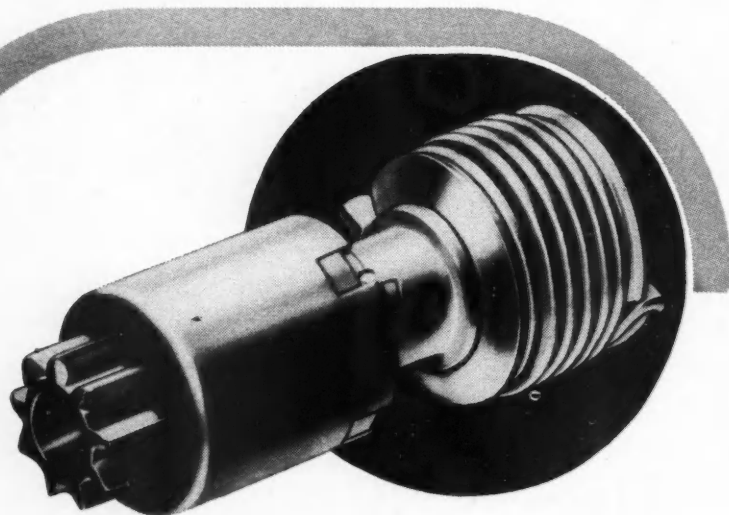
- (1) In preparing Standard Practice Instructions they should not only be gathered and assembled with the idea of a reference manual, but should be considered as a coordinated training program of which the instructions are a part.
- (2) The instructions should be prepared and presented with the idea in mind they can be taken to the job as individual instructions and not as a book or manual.
- (3) The instructions should not only tell how to do the job but list the special tools required, if any, and show *how* they are used.
- (4) That Standard Practice Instructions be prepared by maintenance machine tool manufacturers giving information on how to use the equipment and how to maintain it in accurate adjustment and repair.
- (5) The very character of the information required indicates it is engineering information and should be prepared by maintenance engineers associated with the engineering department.
- (6) The parts of the assembly treated in the instructions should be assigned a true wear limit beyond which the part should be reclaimed, refinished, or replaced.

The projects on reclaiming methods include chromium plating of automotive parts, welding for reclaiming procedures, and metal spray coating in maintenance.

The projects on unit replacement control contemplate studies to determine what methods can be devised to prolong the life of automotive units, by timely adjustments, better lubrication, better selection of materials, and further analysis of the proper periods for the removal of units before actual breakdown. These subjects are of course closely tied to frequency of mechanical failures, which project is being studied with the idea in mind of perfecting methods for recording and analyzing road failures.

The matter of Parts Availability and Supply, the fourth item, is one of the most important functions of the Section. A thorough knowledge of the processes necessary to manufacture automotive parts of every type.

(TURN TO PAGE 86, PLEASE)



EVERY GOOD START RENEWS *good will!*

Because the Bendix Drive has been made an integral part of more than sixty million engines ... designed *into* those engines by capable, conscientious factory engineers... there is no question of Bendix Drive quality and efficiency.

Then isn't it reasonable to assume that the safe and sure way to renew or repair any of those sixty million Bendix Drives is to replace worn parts with time-proved genuine Bendix parts?

No other concern either knows as much about building Bendix Drive parts, or has so much interest in protecting the good reputation of Bendix Drive. When you sell or install parts in a Bendix Drive, or replace it, *your* reputation goes on trial with the job. Every good start, thereafter, renews good will *for you*.

ECLIPSE MACHINE DIVISION
OF BENDIX AVIATION CORPORATION
ELMIRA, NEW YORK

Renew with
**GENUINE
BENDIX
DRIVE
PARTS**

BENDIX DRIVE

"..we used it with some hesitation"

JULIUS F. WERNICKS
SECRETARY-TREASURER

J. M. ROBERTS
ASSISTANT-TREASURER

PENSACOLA COACH CORPORATION
22 South Bruce Street
PENSACOLA, FLORIDA

October 30, 1941.

Abbott Oil Co.,
217 E. Intendencia St.,
Pensacola, Florida.

Gentlemen:

Attention Mr. Chas. E. Abbott.

Something less than a year ago you asked us to tell you the results we had achieved from the use of your Truck and Bus oil, and we were proud to tell you how well satisfied we were, and when you talked us into using Quaker State Heavy Duty (H.D.) oil last May, we used it with some hesitation and a bit of skepticism.

It is now a real pleasure to write you our experiences with this new H.D. oil, for we have accumulated more than a million miles on forty-one pieces of equipment since the change, and we are more than pleased.

We don't know what crank-case sludge is any more, and our ring replacements are less than they have ever been. You may not know it, but it is said by transportation experts that our schedules are the hardest they have ever encountered. We don't know so much about that, but we do know our motors never have a chance to cool off between the end of one day's run to the start of the next.

From here on, when Quaker State tells us they have a better oil we are going to use it, but until then we are going to stick to Heavy Duty, and we take this method and opportunity to thank you.

Sincerely yours,

PENSACOLA COACH CORP.

Julius F. Wernicks
Secretary-Treasurer

JW/WW



Millions of miles of heavy-duty service have proved Quaker State HD Oil more than equal to the most demanding lubrication jobs. No matter how rigid the requirements of your own truck or bus operation, Quaker State HD Oil will meet them . . . and deliver the goods! It will, because Quaker State engineers designed this new oil specially for the punishing pace of today's heavy-duty service.

If you're interested in saving money, write for the Quaker State HD booklet.

QUAKER STATE OIL REFINING CORPORATION
OIL CITY, PA.

QUAKER STATE

HD
OIL

—A NEW OIL FOR SERVICE IN
TRUCKS, BUSES, TRACTORS AND
OTHER MOTORIZED EQUIPMENT
—BOTH GASOLINE AND DIESEL
ENGINE POWERED.

(CONTINUED FROM PAGE 84)

provides the basis for mechanical procedures that may be set up to reclaim such parts when worn.

Building up worn areas by approved methods rather than scraping whole units because of such wear at a time when there is little chance of getting new materials is of definite value. The Maintenance Section personnel of the Office of Defense Transportation have the feeling that the word "salvage" in connection with this type of conservation

does not properly describe such processes. Salvage hints of the scrap pile, when as a matter of fact most worn materials are far removed from the junk classification.

As typical examples of this statement, the following reclaiming procedures may be described. A propeller shaft worn at the joints, beyond repair, because of neglect, need not be scrapped. Two new joint assemblies, to replace the worn joints, removed from the two tubes carrying the male and female splines, may be

rewelded to the old tubes to make a serviceable assembly. If the splines on the old tubes are worn, they may be plated to any desired thickness to compensate for wear. A minimum amount of welding wire and metal for plating, with the addition of two new joint assemblies, reclaims an entire propeller shaft assembly.

A crankshaft worn at either the main bearing or connecting rod bearing areas to a depth that makes a regrind to a smaller available standard size impossible, might be discarded by one unfamiliar with the excellent reclaiming process known as metal coating. This process has many possibilities in the automotive field mainly for the purpose of replacing mechanical wear. Only a few simple rules must be followed in order to assure complete success. Sprayed parts in automotive practice must not be excessively stressed, no fatigue cracks should exist in the foundation piece, the preparation of the foundation should assure keying and dovetailing deep enough to withstand any mechanical pressures involved. Also the base material must be clean and free of oxides, oil, dirt, or water, and the sprayed metal must be finely atomized to insure the molten particles being small enough to penetrate the openings of the prepared foundation.

Preparation of the base material is accomplished by blasting with special steel grit or machining with special tools. Surface hardened shafts require the hardened area removed before preparation.

By the following method, crankshafts may be reclaimed with excellent results. The worn bearing area should be ground to the desired depth to assure uniform thickness in the finished sprayed material. The undercut surface is then shot blasted or machined. The prepared area is coated with the metal selected and the sprayed area is then finished by grinding or machining to the required size. By this method an expensive crankshaft may be reclaimed and brought back to its original dimensions at one-third the cost of a new shaft.

After several grindings engine valves may lose enough material from the valve face to reduce the head dimensions to the point where they seat too low in the cylinder head or block. Hard surfacing materials can be welded to the valve face much in

SAVE

- AMERICA'S VITAL GAS AND TIRES!
- YOUR PRECIOUS TRUCK EQUIPMENT!
- YOUR MONEY AND TIME!

The most constructive move you can make, to—
save trucks, save tires, save gasoline and save money is to install, on every truck you operate, this famous, all-in-one, carburetor and governor—

ZENITH

GOV·U·RETOR

Your trucks are priceless now! Guard them for America's sake as well as your own!

WRITE . . .



ZENITH CARBURETOR DIVISION
BENDIX AVIATION CORPORATION
696 HART AVENUE DETROIT, MICHIGAN

the same manner that new aviation valves are made. This system of rec-lamation restores the valve to original dimensions and further gives it a hard face, impervious to heat.

A further explanation of this item of the program contemplates investigations to determine first, the availability of replacement parts.

Second, surveys of parts needed by vehicle operators to determine their comparative need in value and volume in relation to present supply. Third, information as to future potential need of replacement parts (based on inability to obtain new replacement vehicles). Fourth, present and future sources must be analyzed to determine:

a. Will present sources continue to produce in volume?

b. Are government military orders reducing ability to produce parts?

c. Can present sources be enlarged?

d. Can inadequate sources be re-created?

e. Must new sources be created?

I have purposely saved the Safety item of the program until the last because of its important bearing on the entire program.

There was a time when we could breathe a sigh of relief if one of our vehicles had been involved in an accident, as soon as we learned that no one had been hurt or killed.

Now we can no longer view the material damage with complacence. In a total war every vehicle that runs is part of war transportation or sooner or later it will not be running. With a scarcity of materials it is not a question of whether or not we can pay for replacements—it is a question of their being available.

If they are not, the vehicle cannot run and the beginning of a breakdown has set in. If we have serious breakdowns in our transportation system it may not cost the few lives that are ordinarily lost in a single severe highway accident, it may cost the lives of a whole company of men at the front because they were not supplied with the implements of war necessary to protect themselves to the greatest degree possible.

Thus we come back to our starting point. Efficiency of operation cannot be improved without improving the safety of operation.

END

(Please resume your reading on P. 40)

CHECK EACH BATTERY BEFORE EVERY TRIP!

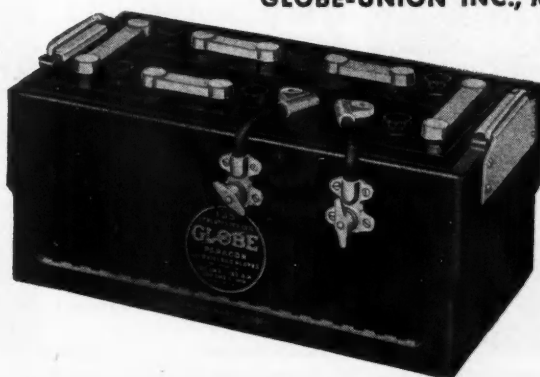


INSURE "Spinning Power" AND AVOID COSTLY DELAYS

To insure against interruption of vital Victory schedules and, at the same time, keep battery maintenance costs low, make battery inspection a part of your regular trip routine.

Replacement service is a battery's toughest job. That's why so many truck, bus and fleet operators prefer GLOBE Spinning Power — the battery that is BUILT ESPECIALLY FOR REPLACEMENT SERVICE. There is no greater assurance of dependable battery performance than GLOBE.

GLOBE-UNION INC., Milwaukee, Wisconsin



ATLANTA • BOSTON
• CINCINNATI •
DALLAS • LOS
ANGELES • MEMPHIS
• PHILADELPHIA •
SEATTLE • KANSAS
CITY • MINNEAPOLIS
• PITTSBURGH

CJ-542

GLOBE

SPINNING POWER BATTERIES

**FOLLOW THE LEAD
OF MILITARY
FLEETS**

**THE ARMY DOESN'T GAMBLE
—IT USES OIL FILTERS**



DON'T GAMBLE



THREE REASONS WHY FLEET OWNERS VOTE FRAM "TOPS"

1 Cleans Oil Chemically: Inside every genuine Fram Cartridge is a patented, chemically-treated "filtermasse" which not only filters out dust, dirt, sludge and abrasives, but also impedes formation of acids and other harmful chemicals that cause costly pitting and corrosion. The Dip-Stick Tells the Story.



2 Metal Cartridges: Genuine Fram Cartridges are in metal cans to facilitate easy, safe removal for changing, without danger of rupturing and dumping sludge and other foreign matter back into the filter. There are genuine Fram Replacement Cartridges for most makes of oil filters.



3 Outside-In Oil Flow: Oil completely surrounds the Fram Cartridge, exposing the greatest possible filtering area to the oil, thereby increasing filtering efficiency and cartridge life. Heavy particles of dirt and carbon sink to a large sump area at the bottom, and can be easily drained off.



FRAM

125I For running-in new and rebuilt engines—dag (ACHESON) Colloidal Graphite. See page 125, and check post card.

126A DROMGOLD and GLEN supplies Truck Refrigerators for every type of commodity. See page 126. Write for illustrated circular, or check post card.

126B WAUKESHA Multi-Fuel Engines—Diesel. Oil, Gasoline, Butane. See page 126. Write for complete information, or check post card.

126C Read the features on LIPE Heavy-Duty Clutches on page 126. Then for full information, check post card or write direct.

126D TRAILMOBILE—product of Trailer Company of America. See page 126. For complete information write direct, or simply check post card.

126E K-D Lighting—the right light for the right job. Page 126. See your jobber, write K-D Lamp Co., or check post card for full particulars.

126F DAYTON spoke type Steel wheels air-cool brake drums and tires. See page 126. Get complete details by writing, or check post card.

126G If you're in the market for Air Compressors, Car Washers, Lifts, get in touch with CURTIS PNEUMATIC MACHINERY DIV. Page 126. Write or check post card for information.

126H Speed Wash Fountain Brush soaks, scrubs and rinses in one operation. See page 126. Write MILWAUKEE DUSTLESS BRUSH CO. for details, or simply check post card.

126I WOHLERT invites you to send your specifications for a quotation on Flywheel Ring Gears, on page 126. Write today, or check post card for more information.

127A Top quality—low price. That's WIRY JOE Wire and Cable. See page 127. Write for detailed information, or simply check post card.

127B KINNEAR Rolling Doors for trucks are fireproof, save space, can't joggle open. Shown on page 127. Write for full particulars, or check post card.

127C For clearer vision, maximum freedom from distortion, investigate LIBBEY-OWENS-FORD Hi-Test Safety Plate Glass. Read page 127. Check post card, or write for details.

127D Efficient charging means longer battery life. See the VALLEY Superduty Charger on page 127. For more information, check post card or write direct.

127E MONMOUTH is the name for engine bearings, clutch plates and parts. See page 127. Secure full particulars by writing, or check post card.

127F NASH spare tire carriers are now made in all types for all trucks and trailers. Pictured on page 127. For further details, write L. B. NASH & BRO., or check post card.

127G JONES Portable Tachometer gives direct, instantaneous reading for engine checking, tune-ups, setting governors, etc. See page 127 for some users. Write JONES-MOTROLA for details, or check post card.

127H INTERNATIONAL Trucks advises that you give your trucks the best service you can get, on page 127. Write for more information, or check post card.

128A Worn bearings are hard on tires. Read about LINK-BELT Roller Bearings as replacements, on page 128. For complete information check post card or write direct.

128B The FITZGERALD MFG. CO. have been gasket craftsmen since 1906. See page 128. For information about the Fitzgerald Bulldog line, write or check post card.

128C Another way to save rubber is to keep a steady check on your tires. Do it with BEAR Alinement Tester. See page 128. Free bulletin on written request, or check post card.

128D AUTOCAR Trucks are available with short wheelbase, or conventional Gasoline or Diesel in all capacities. See page 128. Write or check post card for details.

128E Write for catalog describing DeVILBISS Spray-Painting Equipment, offered on page 128. Or just check post card.

128F See the AUTOPULSE Electric Fuel Pump pictured on page 128. Write for detailed literature, or check post card.

128G Traction and THORNTON are road partners. See page 128. Write THORNTON TANDEM CO. for details, or check post card.

128H An important thing to remember about oil is, "Keep it clean with PUROLATOR." See page 128. Send for complete information, or check post card.

129A HICKMAN-BOSTROM Truck Seats cut driver fatigue, eliminate cushion repairs. See page 129. For complete information check post card, or write BOSTROM MANUFACTURING CO.

129B Don't take chances with a slipping emergency brake. Read about AUTOMATIC BRAKE CONTROL on page 129. Check post card, or write for complete information.

129C PERMALUX "Ko'ofilm"—for appearance, economy, durability. See page 129. Write today for details, or check post card.

129D A-S-F Fifth Wheels are made for every purpose. See page 129. Write American Steel Foundries for details, or check post card.

129E BUFFALO Mufflers "stop that noise." See page 129. Check post card or write BUFFALO PRESSED STEEL CO. for details.

129F DART TRUCKS—especially designed for heavy duty off-the-highway service. See page 129. Have engineer visit and analyze your operation. Write or check post card.

129G ELASTIC STOP Nuts hold tight under all conditions of vibration and hard service. See page 129. Check post card or write for explanatory folder.

129H Put "system" in fuel checking with BOWSER AKRAFLO Fuel Consumption Meter and you'll put dollars in your pocket. Model pictured on page 129. Send for details, or check post card.

129I KINGHAM promises immediate delivery on open and closed top Trailers. See page 129. Write for details, or check post card.

129J "Over 70% of all makes of trucks and buses are ZOLLNER equipped." See page 129. Write or check post card for details.

130A You can find an AVAILABLE Truck for your needs—capacities from 1½ to 10 tons. See page 130. Write for bulletin, or check post card.

130B The FULTON CO. gives its dedication to victory message on page 130. Read it now, and write or check post card for complete information.

130C There is a complete line of HEIL Bodies and Hoists for all types of service. Read page 130. Write for catalog, or check post card.

130D SKF Ball and Roller Bearings are vital to low mileage costs, easy operation, maintained schedules. See page 130. Write or check post card for complete information.

130E THERMOID CO. provides the right braking material for any commercial vehicle. Read page 130. For detailed information, check post card or write direct.

130F JOSEPH WEIDENHOFF offers a complete illustrated booklet telling you all you need to know about armatures and their servicing. See page 130. Write or check post card for your copy.

130G "There is always a priority on safety." Put your trucks on the "preferred list" with YANKEE Safety Equipment. See page 130. Write for facts, or check post card.

130H TRUCKSTELL, INC., offers to rebuild your Chevrolet or Ford truck for heavier duty or special service. See page 130. For further details, check post card or write direct.

130I Oil Saver Piston Rings are the free running rings with the safety center units. See page 130. Check post card or write WAUSAU MOTOR PARTS CO. for details.

131A BOWMAN Plastic Lenses combine flexibility with high grade lens service. See page 131. Free sample and complete information upon written request, or check post card.

131B CHAMP-ITEMS—short cuts to "keep 'em rolling." Pictured on page 131. Check post card or write for free 80-page booklet.

131C HOOFF GOVERNORS are available in Key, Seal, Dash Control types. See page 131. For complete information, write direct, or simply check post card.

131D MEEHANITE Brake Drums provide longer life for brake linings, extra strength for sudden stops. See page 131. For descriptive literature, check post card, or write direct.

131E The answer to the question on page 131 is WOLF'S HEAD. Read about it now. For further details, check post card or write direct.

131F Keep your vehicles moving economically with HALL valve servicing equipment, page 131. Secure full particulars by writing, or check post card.

131G Investigate CLE-AIR hydraulic shock eliminators for a smooth, safe ride at lower cost. See page 131. Check post card, or write for full details.

131H OSHKOSH Four-Wheel Drive Trucks have capacity of 1½ to 10 tons. See page 131. Write for complete information, or check post card.

131I "PeKa" Travel Log charts the daily activities of your vehicles. See page 131. Get complete information by writing PAUL KNOPF, or check post card.

131J Write for catalog 38AC and 38BC on FRINK SNO-PLOWS. Read page 131, or just check post card for details.

133 Another example of how SPICER equipment is working toward victory is told on page 133. Read it now and check post card or write direct for details.

HASKELITE

Saves Pounds... Adds Space

HASKELITE MANUFACTURING CORPORATION • 208 W. Washington St., Chicago

Plymott

- ✓ Metal Faced Plywood Panels
- ✓ Increase Payload Capacity
- ✓ Greater Strength and Stiffness Per Pound of Weight
- ✓ Require Less Framing
- ✓ Easily, Quickly Fabricated
- ✓ Smooth, Non-Wavy Surface

NEWSCAST

(CONTINUED FROM PAGE 44)

Virginia Approves Weight Limit Increase to 40,000 lb.

A bill permitting increase in gross weights of trucks from 35,000 to 40,000 lb. has been signed by the governor of Virginia. Permissible axle weights are increased from 16,000 to 18,000 lb. but only over highways designated by the state highway department. An allowable tolerance will actually permit 42,000 lb. gross weight and 18,900 lb. axle loads.

ATA Emergency Session In Chicago May 18

The executive committee of the American Trucking Association, Inc., will meet in Chicago in the Drake Hotel, May 18, a day earlier than the original schedule, to discuss problems incident to war.

The meetings of the safety and operations, business development, and accounting sections will be held throughout the three days of the meeting May 18, 19 and 20. Among the speakers will be Robert Cass, White Motor Co., who will speak on "Salvaging Truck Mileage"; T. L. Preble, "Maintenance Program of the ODT"; Amos E. Neyhart, "Skill Tests in

Driver Training and Selection"; H. H. Kelley, of ODT, "Truck Transportation and Allocation of Equipment."

D. R. Calhoun Is Trailmobile President; Other Officers Named

David R. Calhoun, Jr., has been elected president of the Trailer Company of America. Mr. Calhoun took office April 1, succeeding A. J. Woltering, former president and treasurer.

At the same time it was announced that C. J. Dalton, former controller of the company, was elected treasurer, and Robert Teare, was appointed assistant controller. An executive committee was formed, headed by Wade T. Childress, president of Columbia Terminals Co., as chairman. The members include Mr. Calhoun, and G. Corson Ellis. Joseph Englaender, remains chairman of the board.

Prior to being elected president of the trailer concern, Mr. Calhoun served as a vice-president and director of the St. Louis Union Trust Co. He is a director of some of the St. Louis industrial concerns including Anheuser-Busch, Emerson Electric Mfg. Co., Busch-Sulzar Bros., Columbia Terminals Co., St. Louis Public Service Co., and others.

Mr. Dalton, before joining the Trailer Company of America about a year ago, was associated with the Chrysler Corp., Ford Motor Co., and Goodrich Rubber Co. for many years. Mr. Teare was a former executive of the Crane Company, Chicago.

The company also announces appointment of Geyer, Cornell & Newell, Inc., as its advertising agency.

War Time Rulings

Numerous new orders (American style) are continually being issued by various branches of the federal government. Most of such orders with which readers of COMMERCIAL CAR JOURNAL are primarily concerned come from the offices of Price Administration, Defense Transportation, and the War Production Board. This is war, and these orders are war-time rulings. A resumé of orders of interest issued in the past month follows:

Because of the extremely serious rubber shortage, tire recapping material allocated for List B vehicles will be almost wholly of reclaimed rubber. This means low safe speeds and short tire life.

The OPA has no objection to issuance of purchase certificates for new tires of obsolete sizes to List B vehicle owners who have changed wheels and rims to permit use of those sizes instead of the recapped casings that otherwise would be the only kind available to them.

The Baking Advisory Committee, WPB, has recommended that baking companies reduce mileage 25 per cent by eliminating special and Sunday deliveries.

The Dairy Industry Advisory Committee proposes a 30 per cent curtailment of deliveries by eliminating special deliveries and using common carriers for scattered trade.

The President has put teeth in government bureaus' efforts to enforce rulings. Violators of rationing regulations now face direct prosecution: \$10,000 fine and im-



STOP TIRE SABOTAGE

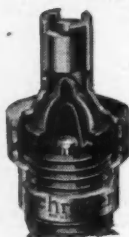
You can eliminate underinflation, the greatest saboteur of tire mileage—right in your service shop.

Tell your tire service men and your drivers to look for the "Soft Tire—Missing Valve Cap" combination. It may not always be the missing valve cap that caused the soft tire. But by screwing a Schrader air-tight valve cap down firmly after inflating the tire to its normal pressure, *you can be sure* that recurrence of underinflation can never be caused by leakage through the valve.

A. SCHRADER'S SON, BROOKLYN, N. Y.
Division of Scovill Manufacturing Company, Incorporated

Schrader
VALVE CAPS

ALWAYS REPLACE THEM AFTER INFLATION



All Standard Schrader Valve Caps are built with this doubly reinforced sealing unit. Guaranteed air-tight up to 250 lbs. pressure.

prisonment for one year for willful violation of priority or rationing orders.

Mincing no words and letting the axe fall on whom it applies, Defense Transportation Director Eastman charged "saboteur" at operators who did not make every effort to properly care for tires.

A pool of passenger cars not shipped by manufacturers prior to January 16, may be released by the OPA. Those being considered for release include specially built vehicles painted or equipped on order of a specific buyer, and automobiles on which registration had been effected or applied for prior to January 1 and for which rationing certificates were given under rationing order No. 2.

The recent order again curtailing gasoline shipments to 17 eastern states has been clarified to exempt deliveries to commercial vehicles, ambulances, or for the use of physicians, Federal, state or local governments, agricultural machinery and some other categories.

Study Class 1 Operations

Class 1 truck operators are being requested to fill out special questionnaires being provided by the Division of Traffic, Office of Defense Transportation. The objective is to determine the exact point-to-point service of all Class 1 motor carriers, the volume of freight they carry between specific points and how much additional freight they can handle between these points. It has been hinted that daily forms of a similar nature may be required.

Synthetic Rubber Contracts Let

The Department of Commerce announces that agreements and contracts estimated to bring the annual production of synthetic rubber to more than 700,000 tons, have been secured from 25 oil, chemical, and rubber companies by the Rubber Reserve Company and the Defense Plant Corp. The plants are expected to come into operation over the next 18 months, and all should be in production by the end of 1943.

Price Administrator Leon Henderson's latest estimates show rubber demands for the non-Axis world to be 655,500 tons in 1942, and 785,250 tons in each of the years 1943 and 1944.

Personalities in the News

E. L. Mench, Jr., is now a senior automotive engineer in the Engineering Division of the Quartermaster Corps, at Holabird Q.M. Motor Base. Mr. Mench was formerly in the transportation engineering department of International Harvester Co.

The J. H. Williams Co., tool manufacturer, has elected the following officers at its recent annual meeting: president, A. D. Armitage; vice-presidents, E. J. Wilcox and Willard C. Kress.

Edward B. Whitman has been appointed public relations director for the American Hammered Piston Ring division of Koppers Co.

Fred H. Lockwood has been appointed director of public relations, Guiberson

Diesel Engine Co., Dallas, Tex. He formerly held a similar post in Borg-Warner Corp.

Frederick C. Horner, formerly assistant to chairman of General Motors Corp., has been appointed to the Transportation Division, Services of Supply of War Department, to take charge of matters relating to commercial truck and bus service and equipment and air transportation. He will serve as assistant to Brigadier Generals Gross and Dillon.

The appointment of Charles D. Cavett as its advertising and sales promotion manager is announced by the Cummins Diesel Engine Corp., New York City.

George Small, who used to be assistant to Sam Houston of International Harvester Co., is now with the 108th Engineers as a Captain in charge of Motor Transport. He is at Camp Forrest, Tullahoma, Tenn.

Gar Wood Industries, Inc., announces that the following managers have been elected vice-presidents of their divisions: W. H. Hammond, sales manager of the hoist, body, and tank divisions and director of branches; J. B. Haile, general manager of the road machinery division; G. E. Robinson, manager of the winch division.

Correction

A tractor shown in conjunction with a Heil tank truck in the April issue of COMMERCIAL CAR JOURNAL was miscredited as a White unit. This is in fact a Sterling tractor powered by a 200-hp. diesel engine.



CAPACITY..



PAR multiple cylinder compressors have a high-capacity rating . . . deliver plenty of air. Faster pumping cuts down operating time . . . keeps air pressure up with plenty of capacity for rush hours and emergency work—no air supply failures, no lost jobs!

If you want more air for less money . . . buy PAR!

* "HOW TO BUY AN AIR COMPRESSOR" . . . FREE BOOK CHOCKED FULL OF WORTHWHILE TIPS—GET YOUR COPY BEFORE BUYING . . . WRITE TODAY!



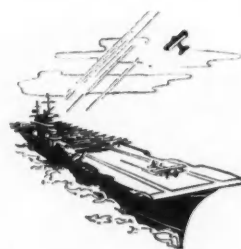
**and a HALF DONE overhaul
won't stop Oil Pumping—**

Replace Worn Engine Bearings!

Don't guess at the cause of oil pumping. A wrong guess usually means a piston ring job—with the motor-fouling oil pumping reappearing within a short time! Worn engine bearings cause costly oil pumping and must be replaced to correct it.

Use the portable Federal-Mogul Oil Leak Detector for quick, *accurate* check-up simply by dropping the oil pan. It instantly reveals whether main, camshaft or connecting rod bearings are excessively worn, or if oil lines are plugged.

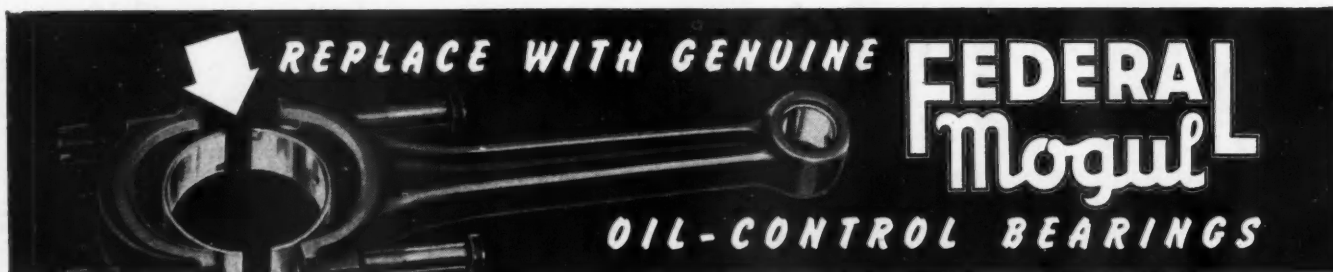
When you find worn bearings, replace in sets with Federal-Mogul Oil-Control bearings to restore power, economy and long-run efficiency.



FOR VICTORY

Submarines, aircraft carriers, mine-sweepers, rescue tugs, dredges are equipped with Federal-Mogul bearings and other precision parts. With added production capacity, Federal-Mogul works "all out" manufacturing bearings and precision parts for planes, tanks, guns, boats—and millions of bearings to service the automobiles carrying armament workers and materials to their jobs. We "keep 'em rolling"!

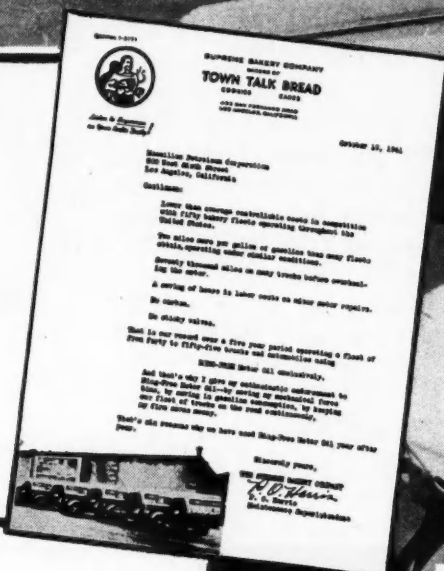
FEDERAL-MOGUL CORPORATION, DETROIT, MICHIGAN



5-Year Record of Big Baking Fleet using RING-FREE exclusively:



- MORE MILES PER GALLON
- 70,000 MILES BEFORE OVERHAULING
- SAVINGS IN LABOR COSTS
- NO STICKY VALVES
- REMOVED CARBON



THAT'S THE RECORD of Supreme Baking Company, bakers of TOWN TALK BREAD in Los Angeles, operating 40-55 trucks and automobiles with RING-FREE exclusively.

"And that's why," says Maintenance Superintendent P. O. Harris, "I give my enthusiastic endorsement to RING-FREE Motor Oil—by saving my mechanical force time, by saving in gasoline consumption, by keeping our fleet of trucks on the road continuously, my firm saves money."

What RING-FREE has done for others, it can do for you. Write us!

* * *

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MAY, 1942

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WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 17)

Tough on Tire Wasters

Henderson's OPA is preparing an amendment to the Tire Rationing Regulations which provides that Local Rationing Boards shall refuse to grant certificates to applicants in both the A and B lists when the tire to be replaced has been rendered useless and non-recappable through deliberate neglect. Ditto applicants who have ruined tires by overloading.

Emergency Rations Granted

Last month's Runaround rumor that I.C.C.-regulated carriers would be granted 10 per cent emergency tire rations became a reality around the middle of April. Details elsewhere in this issue.

Tire Experimenters Busy

In addition to the wooden tires which have been publicized in the

daily press and well-squeezed for their human interest value, there are reports that several large companies are experimenting with new kinds of tires. Ford is said to be experimenting with a new tire consisting of specially treated fabric using only one-sixteenth of the rubber normally used for tires. Pontiac is reported playing with a wood tire and Fisher Body has been trying a steel wheel band in place of a tire. Goodyear is also said to be working on a rubberless tire. Maybe we'll have a synthetic tire before we have enough synthetic rubber.

Synthetic Rubber Experting

The experts on synthetic rubber say that a 700,000-tons-annually production rate will be reached by the end of 1943. But because of the allied nations' need for rubber there isn't a ray of sunshine in this fact for so-called non-essential users—not even in 1944.

Truck Tire Quota Upped

May tire and tube ration quotas

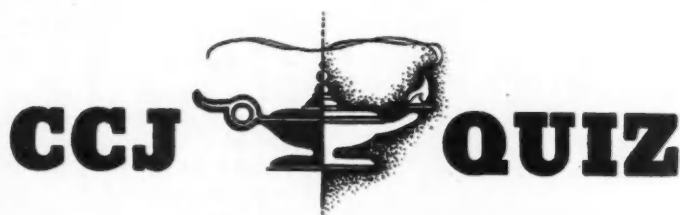
call for fewer new truck tires but more recaps than in April. The May truck tire quota provides 238,259 new and 379,060 recapped tires compared with 275,523 and 246,442, respectively, in April. Truck inner tube quota for May is 328,836 against 260,983. The 16 per cent tire price increase granted by OPA applies to passenger car tires but not to truck tires.

Card Rationing of Gas

Gasoline rationing is slated to begin May 15. From that date on drivers of non-commercial vehicles will have to use ration cards. Operators of all trucks and other motor vehicles that are readily recognized as commercial vehicles will not need cards for gasoline purchases.

U.S. Buys Up Trailers

The Defense Supplies Corp., a Federal agency, is arranging to buy up the 12,000 truck trailers, valued at \$16,000,000, frozen under the terms of the truck and trailer rationing order. The arrangement was suggested by ODT and WPB. Government pur-



by ROBERT F. BAHL
(Correct answers on page 56)

Take care of your truck, and your truck will take care of you. Now that the war effort has placed restrictions on the purchase of new trucks, it's doubly important that you keep your present ones from getting old. That's why this Quiz deals entirely with ways to make your truck last longer. There are 10 questions. Give yourself 10 points for each correct answer.

1

Keep your truck well lubricated if you don't want it to become a "war casualty," but remember that oil and grease can do a lot more harm than good on . . .

- a. Chrome finish. c. Water pump.
- b. Tires. d. Speedometer cable.

2

Here's one very good reason for keeping your air cleaner "clean"—for every gallon of gasoline you use, the amount of air passing through your carburetor is . . .

- a. two gallons. c. 100 gallons.
- b. ten gallons. d. 10,000 gallons.

3

Rule No. 1 in prolonging the life of your tires is to keep them properly inflated. It's better to err a little on the

side of overinflation rather than underinflation, except . . .

- a. When roads are icy.
- b. When atmosphere temperature is above 80 deg. F.
- c. When traveling for long stretches over smooth roads.
- d. When traveling on macadam roads.

4

Why should you idle a hot engine a few minutes before turning off the ignition?

- a. To keep the battery from discharging excessively.
- b. To avoid damage to the octane selector.
- c. To prevent "vapor lock."
- d. To avoid "flooding" the carburetor.

5

With chromium high on the critical list, the chrome finish on your truck almost takes on the aspect of gold plating. You can keep your chrome shining longer if you regularly treat it with . . .

- a. Salt solution. c. Butter.
- b. Lime water. d. Furniture wax.

chase of trucks frozen for rationing has also been suggested by ODT.

Truck Production Extended

Early in April truck manufacturers were given until April 30 by WPB to finish up February medium and heavy truck civilian quotas (9000 lb. gross weight and over). Manufacturers also have until May 31 to wind up amended March quotas of heavy trucks (16,000 lb. gross and over). March quotas previously had been cancelled.

ODT Maintenance Matters

The Maintenance Section of ODT's Motor Transport Division is getting up procedure for storing trucks. This will tell the trade how to store trucks for safe-keeping pending transfer by rationing, and tell operators hit by conservation orders how to tuck their trucks away for the duration. We learn from one informant that it costs \$15 in labor and materials (mostly labor, of course) to tuck away a truck. The Maintenance Section is also trying to work up a plan

for policing the maintenance program given elsewhere in this issue.

Our Gripe of the Month

In justifying harsh measures directed at the public Washington bureaucrats make a habit of ballyhooing absurd examples of practices which their harsh measures are intended to correct. Thus in justifying stringent gas rationing they say "it is unthinkable that sailors be asked to take the risk of going down on a burning ship in order that someone may have gasoline to go to a bridge party or the ball game." The absurdity used against trucks is: "We can't have trucks running around just to deliver an orchid to some society lady." Those who use the one-orchid load as a common denominator of truck use won't be swayed by facts but anyway they should know that florists operate approximately 6300 commercial vehicles, many of them passenger cars. They are the only ones likely to haul an orchid and they represent one and one-quarter thousandths of one per cent (.00125) of trucks registered in this country.

6

Changing the spark plugs in your engine is important, especially in times like these. The correct gap is important and also the correct "temperature characteristic." A plug that gets too hot will burn its points out rapidly, while one that is too cool will . . .

- a. Cause knocking due to pre-ignition.
- b. Quickly become fouled with oil or coated with soot.
- c. Make the motor prone to stall.
- d. Put extra strain on the ignition system.

7

Why is it bad to park your truck under a maple tree?

- a. Maple sap drops from the branches and mars the paint finish.
- b. Insect secretions drop and are harmful to the finish.
- c. Tires will become underinflated from the coolness.

8

Uneven or "feather edge" wear on the tread blocks of your tires is a danger flag.

It's a warning that . . .

- a. Tires are overinflated.
- b. You drive at too fast a speed.
- c. You turn the corners too fast and too sharply.
- d. Your wheels are out of alignment.

9

Go ahead and tell us we're crazy, but first tell us which of these is especially good for cleaning the windshield of your truck?

- a. Pink lemonade.
- b. Stale beer.
- c. The first snow in March.
- d. Castor oil.

10

Wasting gasoline when you could get all you wanted was bad enough. Now, though, it is tantamount to sabotage. This last question, then, asks you which of these driving practices is wasteful of gasoline?

- a. Low gear driving.
- b. "Pumping" the accelerator.
- c. Driving at a speed greater than 45 miles per hour.
- d. Sudden stopping.



. . . a special selection made by the editors . . . to get your copy, just check the letter on the post card between pages 90 and 91 which corresponds with the item you desire and mail to Commercial Car Journal, Philadelphia.

Hand Truck Catalog

Here is a new 20-page catalog issued by the American Pulley Co., and devoted exclusively to hand trucks. Hand trucks designed to meet the need of both shop and loading platforms are well illustrated and accompanied with complete specifications. Of especial interest to truckmen should be the illustrations of the new "Upsy," a steel drum-carrying truck, and the new type barrel and drum cradles. Check "A" on the postcard.

Tire Conservation Booklet

A new publication pertaining to the conservation of tires has been announced by the Bear Mfg. Co. The book tells briefly, but vividly, the value of wheel alignment and wheel balance in the conservation of tires. Check "B" on the postcard.

Bearing Shop Manual

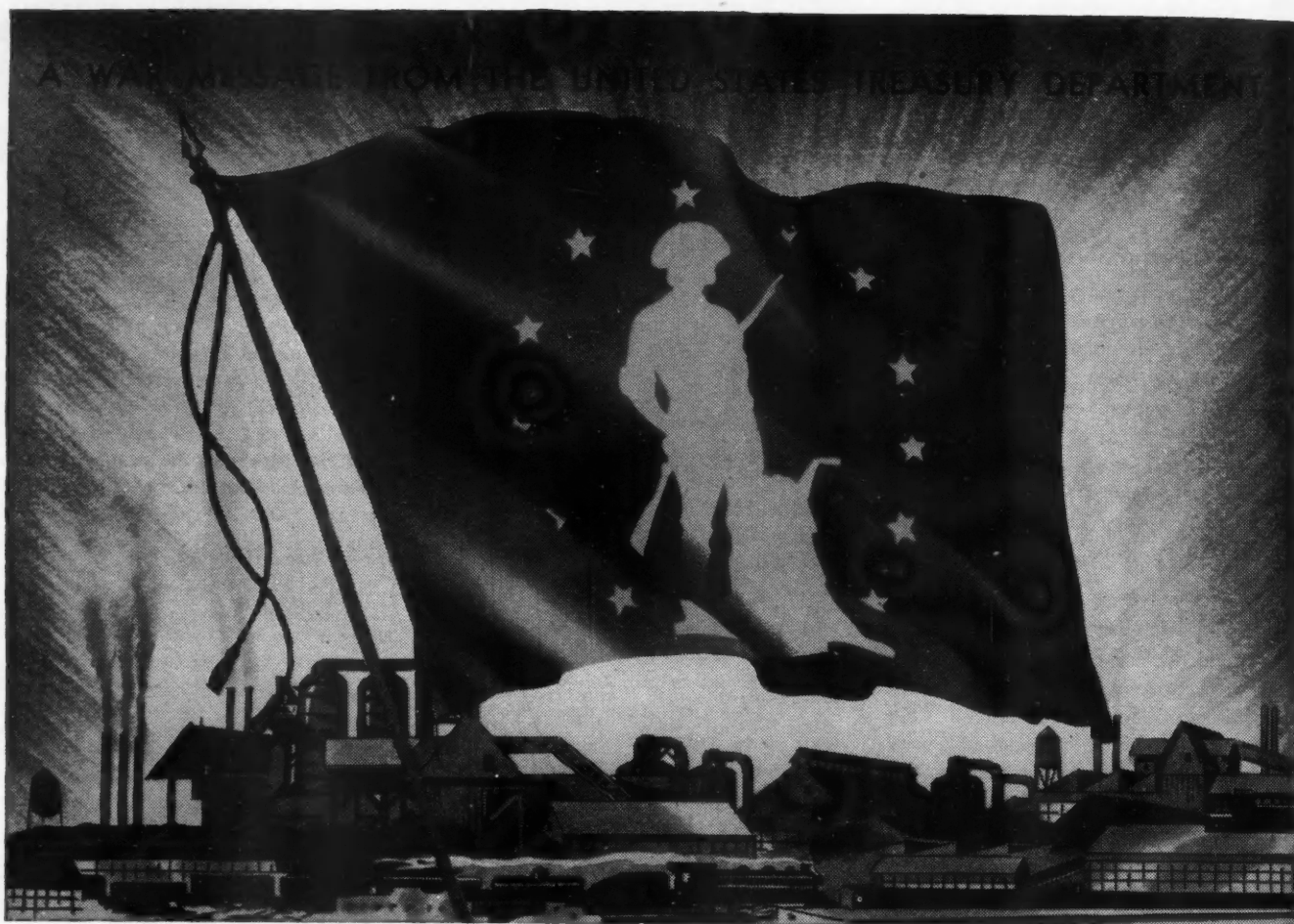
Containing in convenient reference form essential size information for engine bearing service, a new shop manual has just been published by Federal-Mogul Corp. Covering such vital information as bearing oil clearances, crankshaft dimensions, and installation of shims, this 64-page book is divided into sections for quick reference. Check "C" on the postcard.

Tire Text

A new 52-page booklet explaining in detail the rules for the proper care of truck tires and containing suggestions which will enable operators to obtain every possible mile of service from their present tires has just been released by The Firestone Tire & Rubber Co. Check "D" on the postcard.

Metal Cleaning In Wartime

The Mangus Chemical Company, Inc., has just announced the publication of a new 50-page book on metal cleaning. In addition to the cleaning problems encountered in the production of war materials, a section is devoted to cleaning in maintenance and repair shops. Check "E" on the postcard.



Next to the Stars and Stripes . . .

AS PROUD A FLAG AS INDUSTRY CAN FLY

Signifying 90 Percent or More Employee Participation in the Pay-Roll Savings Plan

IT doesn't go into the smoke of battle, but wherever you see this flag you know that it spells Victory for our boys on the fighting fronts. To everyone, it means that the firm which flies it has attained 90 percent or more employee participation in the Pay-Roll Savings Plan . . . that their employees are turning a part of their earnings into tanks and planes and guns *regularly*, every pay day, through the systematic purchase of U. S. War Bonds.

You don't need to be engaged in war production activity to fly this flag. Any patriotic firm can qualify and make a vital contribution to Victory by making the Pay-Roll Savings Plan available to its employees, and by securing 90 percent or more employee participation. Then notify your State Defense Savings Staff Administrator that

you have reached the goal. He will tell you how you may obtain your flag.

If your firm has already installed the Pay-Roll Savings Plan, now is the time to increase your efforts: (1) To secure wider participation and reach the 90-percent goal; (2) to encourage employees to increase their allotments until 10 percent or more of your gross pay roll is subscribed for Bonds. "Token" allotments will not win this war any more than "token" resistance will keep our enemies from our shores, our homes. If your firm has yet to install the Plan, remember, **TIME IS SHORT.**

Write or wire for full facts and literature on installing your Pay-Roll Savings Plan now. Address Treasury Department, Section D, 709 12th St., NW., Washington, D. C.

Make Every Pay Day "Bond Day"



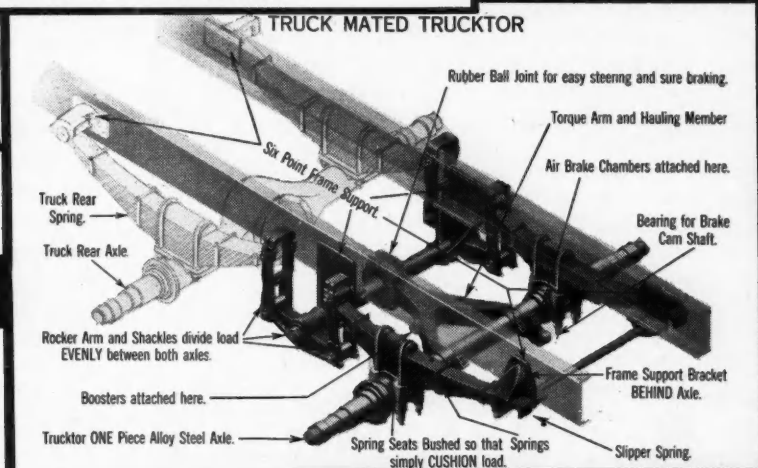
U. S. WAR Bonds ★ Stamps

HOW TO GET A *LOT* MORE TRUCK FROM A *LITTLE* MORE STEEL !



THIS 4-WHEELER

PLUS THIS
THIRD AXLE



MAKES THIS 6-WHEELER



Our tremendous armament program is going to require a lot more truck transportation capacity NOW. The addition of a Trucktor Third Axle to four-wheel trucks that are now in service will, in most cases, double the payload capacity of that truck. This will conserve for the nation the following vital items:

- (1) RUBBER (Tires and Tubes)
- (2) TRUCKS (Steel, Engines, Transmissions, Axles)
- (3) GASOLINE (Oil and other Vital Automotive Parts)
- (4) MANPOWER

A six-wheel truck uses less rubber than two trucks and saves steel, engines and other important materials. The one engine in the six-wheeler burns less gasoline and oil than two trucks would consume, and one driver would be eliminated.

Besides this, the single unit six-wheeler is easier on the highway (proved by government tests). It is safer, (verified by I.C.C. accident reports and insurance company statistics). It is more maneuverable (witness its wide use by the Army). Get the facts now!

THE TRUCKTOR CORPORATION, 156 WILSON AVE., NEWARK, N. J.

Trucktor THIRD AXLES

Help Win the War BY MAKING *New* SAVINGS ON SERVICE, REPAIR AND MAINTENANCE WORK

FOR EXAMPLE:

Making repairs faster by cleaning parts the Oakite way

Put this time-saving idea to work in your shop if your fleet units have to spend longer hours on the road... because then your overhaul and repair work must be handled easier, faster, if units are to be put back into service promptly.

Soak dirty, greasy repair parts in recommended Oakite solution. Note how oil, grease and dirt are thoroughly removed... how subsequent repairs proceed smoothly, quickly. No fire hazard... Oakite solutions are non-flammable, non-explosive. Write for FREE 36-page manual giving complete details.

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OAKITE

MATERIALS...METHODS...SERVICE



CLEANING

FOR EVERY CLEANING REQUIREMENT

BYERS TIRES

(CONTINUED FROM PAGE 36)

corrected at the stop. Tool kits are carried on each truck for just such purposes and if the driver cannot find the cause, he allows the tire to cool to normal pressure, makes a note on his run-card and proceeds to the next check stop station.

These stations are located approximately every 50 miles along the route. They are established by our insurance company which holds them responsible for correctness of equipment such as air pressure gauges. There

is a time clock in each, supplied by the insurance company, and the driver must note the time in and out on his run-card.

The stations are spaced and stops timed so that the motors and tires will be allowed to cool, and the driver to rest. This cuts down motor and tire wear. Each stop is for 20 minutes, which has been found to be sufficient time to allow tires to lose picked-up air pressure in 50 miles of driving. Air is never let out at the stops to reduce pressure but allowed to cool out. Tire pressure is checked after the cooling period.

Checking air at the stops also locates most slow air leaks before they can do damage and makes repair of them then much simpler. We also used these stops to finger-check lug bolts. However, we haven't found this necessary since we adopted a policy of having two men put their weight on lug bolts to tighten them with the wrench.

Most of our new tires begin their work on any one of our tractor wheels or the outside trailer wheels because these are the trouble points: The front tractor wheels because tire failure at this point often will throw the unit out of control; the rear tractor wheels because they not only carry heavy weight but must also stand the "drive" pressure for the entire unit and thus are most likely to pick up heat pressure; the outside trailer wheels because they ride the curb and crumbled edges of the highway more than any other tires and must suffer more bruises as well as carrying a heavier load some of the time. As they become older and worn they are transferred to the inside trailer wheels. On our 500-mile run we use only tires that have never had a casing break, that have more than 1/32-in. of tread, and will hold air pressure as well as a new tire.

Ninety per cent of our new tires are mounted during cold weather (Oct. 1 to May 1) because our records show that cold weather mounted tires outlast warm weather mounted tires by 20 per cent. Two examples from our file are representative: They show that two tires mounted in October ran 76,000 miles and 79,000 miles before needing recapping while two purchased at the same time from the same firm but mounted in July needed recapping at 61,000 and 63,500 miles. About 90 per cent of our tires are recapped.

When a tire comes to us it is im-



**WE BUILD AMERICAN
SAFETY TANKS
FOR DIESELS TOO!**

AMERICAN SAFETY TANK CO.

**Step Up Truck
Capacities, with
GRICO
2-AXLE DRIVE**

19842 W. Eight Mile Rd.
Detroit, Michigan

mediately entered on a double record; first on the card supplied by the manufacturer which is filed according to serial number and, secondly, on the record card of the unit to which it is assigned. Tires come up automatically for switch overs, according to the amount of wear as noted on these cards.

Heretofore we bought our year's supply of tires in advance and plan their life on a 20-month basis. October was our tire buying date and we made volume purchases at one time so as to take advantage of lower cost.

We send our tires to be recapped when the center tread is just worn smooth. This period is usually anticipated two or three trips in advance. We never use recaps on drive wheels in warm weather because we have found that due to extra pull and stop "drive" pressure they will stand up 30 per cent less than if placed on inside trailer wheels, while the same factor doesn't appear to bother new tires.

Formerly we found that our tire company would accept 10 per cent of our tires for a second recapping but something seemed to happen to these tires, such as bruises or casing breaks by the time they approached 150,000 miles, so we discontinued the practice.

Whether a tire will take recapping is left entirely up to our tire company which guarantees the job. When the recap comes back to us it usually goes on one of the trailer wheels and stays there on the 500 mile run until it has piled up about 125,000 miles and is beginning to get smooth. Then it is either transferred to the short-run or put on city delivery work until it wears down to the cords or otherwise fails in operation. Many of our tires pass the 150,000 mile mark under this plan and we are aiming at obtaining this as an average. The older these recaps get the more they are confined to cold weather work because we have found that this practice will often give us longer service.

About 90 per cent of our tires will take a recap and we prefer the "rib" type because of our use on trailers which seems to favor this type of tread.

We never have tires regrooved because our tire company informs us that this weakens the tire, adds nothing.

(TURN TO PAGE 121, PLEASE)



Typical MICHIANA Filter. Base castings differ for different installations. Either type filter element may be furnished.

Cut Oil and Gas Waste

Cleaned oil means better lubrication, less engine wear,—better performance. To save oil and gas is a patriotic duty, and a vital necessity today.

Michiana Duo-Flo Filters have proven their oil cleaning efficiency on tens of thousands of motor-driven vehicles of all kinds. They are designed on the double-depth principle to give extra filtering capacity.

The Re-Packable Filter permits of unusually low servicing since only the filtering material, Michiana Wastex, need be replaced in

the element.

The Replaceable cartridge or "throw-away" type is similar in the excellence of its performance but in this type the complete cartridge or element is replaced when servicing.

Standard models are made for all standard engine displacements and capacities—with other types for both gasoline and Diesel engines of special capacities.

Start saving your engines now,—write for Bulletin 839.

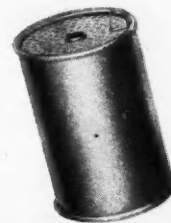
MICHIANA PRODUCTS CORPORATION
Michigan City, Indiana

MICHIANA

Duo Flo OIL FILTERS



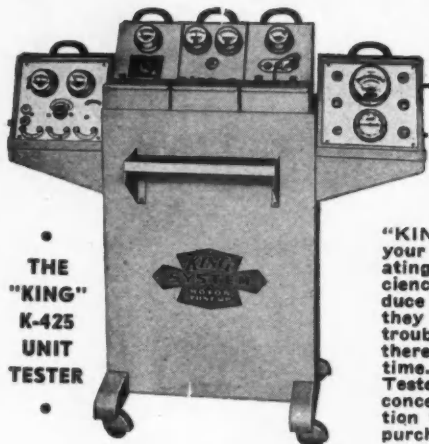
The replacement of the used "Wastex" makes the filter as good as new. Simple, inexpensive, quick.



With the Replaceable Cartridge Type, the used cartridge is thrown away and replaced by a new one.

SAVE GAS 17% with TUNE-UP

The American Automobile Association in cooperation with the U. S. Bureau of Standards have made important tests on Gas consumption. The tests show that after proper tune-up and making the necessary minor repairs, **GASOLINE MILEAGE INCREASED 17.3% ON THE AVERAGE AUTOMOBILE.** The test was made on cars of all ages, conditions, and price range in proportion to the national registration.



• THE
"KING"
K-425
UNIT
TESTER
•

Save
money
WITH
"KING"
TESTERS

"KING" Testers will keep your cars and trucks operating at MAXIMUM efficiency. They not only reduce Gas consumption, but they enable you to locate trouble easily and quickly, thereby reducing repair time. With "KING" Unit Testers you can make every conceivable motor and ignition test, and they may be purchased individually.

Ask your Jobber or Write Us Jobber's Name

The **ELECTRIC HEAT CONTROL Co.**
9127 INMAN AVE. CLEVELAND, OHIO
KING • Good Products Since 1914 • **KING**

ANTHONY Super HYDRAULIC HOISTS A COMPLETE LINE IN ONE DESIGN FROM—

5 to 30 ton



Anthony offers you the hoist with every desirable mechanical feature built into each of 9 super hoist sizes. Whether you buy a 1½ yard or a 20 yard dump body you get each and every Anthony Super Hydraulic Hoist feature. Here is the line of hoists specially constructed for profitable dump truck operation.



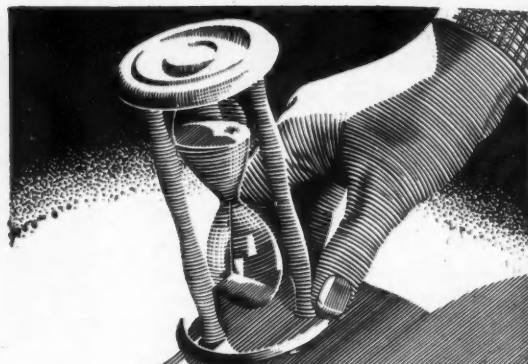
Line drawing shows location of "Rubber Restraining Blocks"

FASTER OPERATION — LONGER LIFE BECAUSE OF THESE FEATURES

- "Push-Pull" dash control
- Double Arm "Power-Speed" lift
- "Low Mounting Height"
- Special "Rubber Restraining Blocks"
- "Telescopic" hoist frame
- "Floating Gear," Pump, Etc.

Write Today for Complete Sales Manual

ANTHONY COMPANY, INC., STREATOR, ILLINOIS



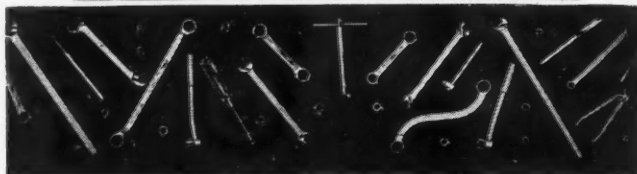
Time

determines the worth of all things. Time has determined the intrinsic value of Duro Tools. Their years of uninterrupted service—their precision performance of specific operations—have proven the importance of their quality.

DURO METAL PRODUCTS COMPANY
Dept. CC-3 2649 N. Kildare Ave.
CHICAGO, ILLINOIS

DURO

MANUFACTURERS OF OVER 500,000,000 TOOLS



Cole-Herssee Keeps 'em Rolling

Cole-Herssee

Switches and Connectors
when used as replacements
accomplish two definite and
important functions:—

FIRST

Increased operating
efficiency

SECOND

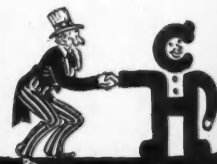
Make up for worn copper
wires, which are difficult to
replace!

America First!

During these critical times
we must all be consider-
ate of the problems con-
fronting us, therefore,
late or incomplete deli-
veries we hope will not
reflect against the good
will created between us
for over 25 years.

Quality

ELECTRICAL AUTOMOTIVE
AND AVIATION EQUIPMENT



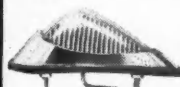
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for
**SAFETY
LIGHTING
and
EQUIPMENT**
It's
DO-RAY
ALL THE WAY

DO-RAY Certified Safety Lighting and Equipment has been tested by recognized laboratories and passes specifications of S. A. E. and I. E. S. meeting requirements of I. C. C.



**STREAMLINED
CLEARANCE
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No. 1203. Modernistic, 7-in-Line, clearance or fender lamp. Heavy gauge metal construction. Meets S. A. E. requirements.



**ANGLE BRACKET TYPE
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No. 1130. Reinforced steel bracket. Black enamel finish.



**SEALED BEAM BLACK
FOG LAMP**

No. 600. A Glaseal beam fog lamp—latest unit by General Electric. 6 1/4 inches in diameter, sturdy Do-Ray construction. General Electric Amber Glass seal unit. Theft proof.



**DO-RAY GIANT LITE
STOP LIGHT**

With Angle Bracket

No. 70. Ideal for trucks with bodies extending a considerable distance beyond rear axle. Lamp bolt and bracket hole spacing permit four different mounting positions.

USE
DO-RAY



ALL
THE WAY

DO-RAY
LAMP COMPANY

1458 S. MICHIGAN AVE. · CHICAGO
SAFETY LIGHTING AND EQUIPMENT

(CONTINUED FROM PAGE 119)

ing to its life, and we have always been afraid that a regrooved, or tread-cut tire, might not be safe enough for our work.

All casing and tube repairs are handled by our dealer. Because the Missouri State Law requires it, we carry a spare under the trailer of each unit. We avoid and turn down jobs and runs where tire injury hazards are extreme, such as very doubtful roadbeds or completely exposed railroad tracks.

Our regular shop tire inspections are threefold. The driver inspects his own unit when he brings it in. I personally check every unit at least once a week and shop checks are made once every 500 miles. These trip inspections include air pressure, inspection for casing breaks or bruises, nails, depth of tread, and checking for expansion of casing.

This inspection is part of our shop's 500-mile check of each unit which also includes: check of water pump and cooling system for leaks, check of oil level and amount of oil used on last trip, check of all lights including stop and focus, check of spark plugs and points as well as exposed wires.

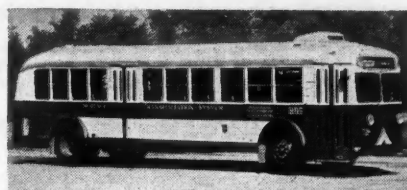
Any one of the three persons inspecting may direct that a tire be dismounted for spreading and further inspection. The inspection is scheduled if a tire appears to need a recap, if it has been losing pressure, if it gives the appearance of a casing break or cut, or if it appears to be cracking or deteriorating more than normal.

We always mount new tires with new tubes because we have found the tube's lifetime to be about the same as the tire—150,000 miles. I spend two hours daily matching casings for dual wheels and checking tires for abnormal wear and expansion. Spares are frequently used in this matching process.

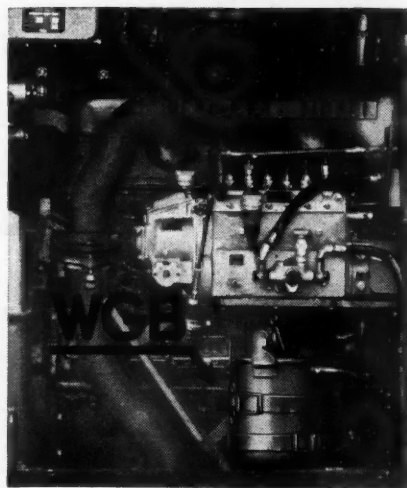
Ideal matching of tires, in my opinion, includes: same make and same general age and mileage, about same depth and type of tread, and same expansion of casing.

In a tire's lifetime we will change it two to three times to meet weather conditions and thus lengthen its life, and when possible we observed the same winter curing process for recaps that we do for new tires. We

(TURN TO PAGE 125, PLEASE)



**TWIN COACH
DIESEL ELECTRICS**
use only
WGB



Keep records and you'll know that WGB oil clarification is cheapest in the end. Tough, rugged, simple, re-fillable without tools, WGB Clarifiers outlast your gas or Diesel engine. Their low-price cartridges cost less to replace than an oil change. They keep oil amber clear, prevent sludge, excessive wear, and frequent overhaul, and make oil changes practically unnecessary.

Write for big new book explaining WGB clarification and why it is standard equipment on many of the best known gasoline and Diesel Engines. Book is free.



WGB

OIL CLARIFIER, INC.

KINGSTON, N. Y.

50 KINGBEE STYLES

Meet Every Rear View Need

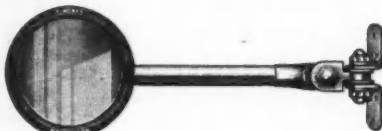


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—added protection through wider range of vision—fully adjustable—clear or non glare glass.

NO. 214 PROTECTO RUBBER RIM MIRROR

—Heavy duty type—full universal—rust proof, water proof—extendible—recommended where extra rigid mounting is required.

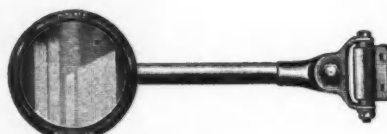


NO. 209 RUBBER RIM BUS MIRROR

—maximum protection for glass—simple and speedy glass replacement when necessary—right and left hand styles.

NO. 218UV PROTECTO RUBBER RIM MIRROR

—Mounts direct to body or to any size hinge—extendible and adjustable—up and down—forward and backward.



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Manufacturers of the Famous KINGBEE Products

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Ingersoll-Rand quality compressors will give you many years of trouble-free service. Their sturdy V-type construction, ball bearings, stainless steel valves, dust-tight crank-case, and I-R automatic centrifugal unloaders assure long life. See the Ingersoll-Rand jobber about these units today. You will find their cost surprisingly low.

3 hp. two-stage compressor unit



3-24

Ingersoll-Rand

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Repairmen

For sixteen years
the **CHILTON**
Flat Rate and
Service Manual

has been the leading

Flat Rate Book in ac-
curacy and dependa-

bility. It has led the

way always with new

and practical features.

Be sure the name

CHILTON


is on the Flat Rate you buy.

Where
Secure
Seals Are
Vital



VICTOR
GASKETS, OIL SEALS
GREASE RETAINERS

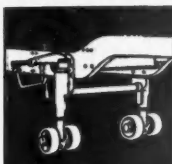
ATLAS
Collapsible
GATE
(CLOSED - OPEN)



Heavy galvanized wire suspended from rings which slide on a round track. "Chain Link" weave as is used in best quality fence. Protects against theft and loss. Easy to open and close. Weave collapses within itself, saving space. Rigidly made for long, hard service, yet it is so light in total weight that average gate weighs only 80 lbs. Easily installed by owner's men. Satisfaction guaranteed. Quantity Discounts—Distributors Wanted.

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AUSTIN THE ACCEPTED
STANDARD . . .
A complete line
of **LANDING
GEARS** . . .
HORIZONTAL,
VERTICAL and
FOLDING TYPES.



Write for complete information on "SAFETY PROPS" and FIFTH WHEELS.

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TRAILER EQUIPMENT COMPANY MUSKOGON
MICHIGAN

**— BRAKE
DRUMS —**



The choice
of America's
Largest Fleets
because of their
Efficient Perform-
ance and Econom-
ical Operation.

REYNOLDS MANUFACTURING CO.
Springfield, Missouri

TO KEEP THEM ROLLING



Use Genuine,
TIMKEN BEARINGS

**THE TIMKEN ROLLER BEARING
COMPANY, CANTON, OHIO**

(CONTINUED FROM PAGE 121)

do not shift tires from wheel to wheel at regular intervals but according to wear; in other words we try to balance the wear of the tires mounted together.

We do not charge shop expense of changing tires to tire cost because our five mechanics, who work three shifts on a 24-hour basis, have been able to fit it into their schedule with little effort. We employ the usual tire changing equipment with the exception that we have rigged up a wood block, slightly smaller than the wheel rim to help in dismounting tires. This wood block is mounted on a heavy steel base and when the air is removed from tires the wheel is lowered with force on the block and usually the tire drops down over the block without the need to hammer it off.

In line with our tire program, the shop makes a complete brake inspection every 2500 miles. This has stretched out brake life to 80,000 miles. The inspection includes cleaning the valves, checking air lines for brakes, examination of the linings and a test of the hook-up for balance. Then the mechanic rides with the truck on its next trip out to the first check-station about 16 miles through heavy city and highway traffic to check the brakes on the road.

At the same time we check wheel alignment and are able to catch misalignment before it causes excessive tire wear. We have cut down out-of-line wheel trouble by being careful about bumping curbs.

In checking for tire expansion we use wood rods with diameter the same as the distance between new tires mounted on dual wheels. We simply pass this rod between the tires on the loaded truck and if it won't pass then we take the tires off and measure them with a "C" gauge. We have standardized on wheels so this distance is always the same unless the tires have expanded.

One-half inch is considered excessive expansion of tires by us and any tire that expands this much is removed from highway work. Seldom will an expanded tire run more than 5000 miles on road work but may give 10,000 to 15,000 miles of city work. Because of our light loads we have little tire expansion worry.

To cut down drag on equipment
(TURN TO PAGE 126, PLEASE)

APPROVED

"DANDUX" PRODUCTS

You can save and still buy quality when you specify "Dandux." Precision craftsmanship and finer materials are your assurance of extra service and value in Dandux Canvas Products.

The major portion of our expanded facilities are now devoted to the canvas requirements of America's Armed Forces, and Uncle Sam comes first. However, and we pledge the supply of all requirements to the best of our ability, subject of course, to existing regulations.

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Manufacturers of Everything of
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Newark • Boston • Buffalo • Chicago
Cleveland • Detroit • Hartford • Milwaukee
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FULLER
TRUCK TRANSMISSIONS

For easy shifting, quiet operation, hauling power and dependability, be sure to choose trucks equipped with FULLER'S.

FULLER MFG. CO.
KALAMAZOO, MICH.

HOLLAND
CAN "TAKE IT"

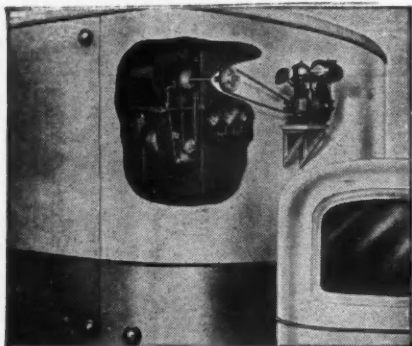
The smartest, most improved unit of its type, Model V-400 Vertical Lift Landing Gear is especially adapted for heavy duty service. Powerful—rugged—dependable. Complete truck and trailer equipment. Catalog on request.

HOLLAND HITCH CO.
HOLLAND, MICHIGAN

For running-in new and rebuilt engines, use auxiliary lubricants containing—

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REG. U. S. PAT. OFF.
COLLOIDAL GRAPHITE

Acheson Colloids Corporation
PORT HURON MICHIGAN



TRUCK REFRIGERATORS FOR EVERY TYPE OF COMMODITY

D & G SPRAY TYPE REFRIGERATOR for hauling fresh meat, dairy products and other pre-chilled commodities.

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Write for circular illustrating type of Refrigerator best suited for your purpose.

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ALL LIQUID OR GASEOUS FUELS

LIPE HEAVY-DUTY Clutches Insure Maximum Clutch Life

★ 20 ball-hinged levers for uniform pressure, smooth engagements, easy disengagements.

★ Parallel disc contact. ★ No localized burning. ★ Long facing life.

★ Warp-resisting pressure plate.

★ Rigid cast iron construction. ★ Forced internal air cooling.

Write for Full Information
Lipe-Rollway Corporation
Syracuse, N. Y., U.S.A.



**THE TRAILER COMPANY
OF AMERICA**

//

**CINCINNATI
OHIO**

(CONTINUED FROM PAGE 125)

due to poor lubrication, resulting in tire and fuel waste, all wheels and chassis are lubricated every 500 miles. We lubricate so frequently because on our 500-mile runs our trucks will run into rain or water on the slab on 75 per cent of their trips with the result that lubricant is washed out. Lubrication can be done while our trucks are being loaded as we have an air line along the loading dock.

Not only does this dock-length air line allow us to grease while loading but also permits us to test our tires at the same time.

We consider load balancing a very important tire conservation factor. All loads are balanced to distribute their weight evenly over the rear tractor and the trailer axles. Center weight of the load is balanced to center of the trailer. We accomplish this by careful placement of freight during loading. Since the tractor's axles must carry the driver's weight and the weight of 100 gallons of gas which we send out to make the complete round trip on the 500-mile run, besides handling the power factor, we never put more than 11,000 lbs. of pay load over it. We hold the weight carried by the trailer axle down to 12,000 lbs. of pay load.

Off-balance loading will not only blow out tires but also cause road sway and unnatural wear to many moving parts. Our shop foreman and drivers check all loads carefully for over or off-balance loading before starting the run.

Another shop help which we are considering is a casing-shaped tube tester made of fine mesh wire and braced. Our idea is to place the tube under this covering and expand it to "load" air pressure to determine if it has high pressure leaks or shows weak spots. We believe this will tell us if older tubes are fit for further service.

Frankly, with our present tires we don't expect to get more than a total average mileage of 150,000, including recaps. After traveling that distance the tires seem to get soft and are easily injured.

We have found that as tire costs go down, so do the costs of our other maintenance needs.

END

(Please resume your reading on P. 37)

K-D LIGHTING

The right light for the right job

**GO TO
LIGHTING HEADQUARTERS
YOUR K-D LAMP JOBBER**

★ ★ ★ **K-D LAMP CO.** ★ ★ ★
CINCINNATI, O.

DAYTON Spoke Type Steel

WHEELS AIR-COOL

BRAKE DRUMS AND TIRES

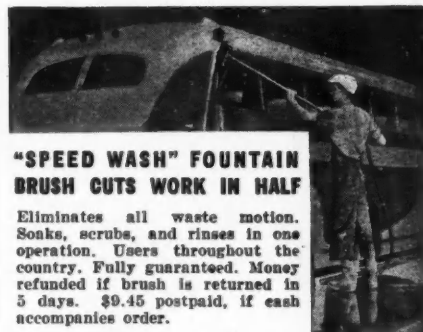
FOR TRUCKS, TRAILERS AND BUSES.
THE DAYTON STEEL FOUNDRY CO.
DAYTON, OHIO

CURTIS
ESTABLISHED 1854
ST. LOUIS

**AIR COMPRESSORS
CAR WASHERS
LIFTS**

Curt's Pneumatic Machinery Division
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"SPEED WASH" FOUNTAIN BRUSH CUTS WORK IN HALF

Eliminates all waste motion. Soaks, scrubs, and rinses in one operation. Users throughout the country. Fully guaranteed. Money refunded if brush is returned in 5 days. \$9.45 postpaid, if cash accompanies order.

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TOP QUALITY.. LOW PRICE

Wire Joe

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KINNEAR ROLLING DOORS FOR TRUCKS

Save space! Open upward! Coil out of way. Always safe from wind. Can't joggle open! Less chance of damage to doors. All Metal. Fireproof! Prevent thefts. Write for details.

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FOR BUILDINGS — the recognized leader

For Clearer Vision, Greater Safety, Specify

LIBBEY-OWENS-FORD HI-TEST SAFETY PLATE GLASS

It's clearer, with maximum freedom from distortion. Used in thousands of cars and trucks as original equipment. See your dealer or local Glass Shop. Libbey-Owens-Ford Glass Company, Nicholas Building, Toledo, Ohio.

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Meets 1942 Conditions

Eliminate Run Down Batteries for Low Cost Battery Mileage. The new, improved, Valley-Guaranteed (two years) charger connects to the lighting circuit . . . is easy and economical to operate . . . no moving parts. Now it is easy and inexpensive to obtain long battery life by maintaining efficient battery charge. Model SG-12 charges 1 to 12 6 volt batteries.

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**For Engine Bearings
Clutch Plates & Parts
King Bolt Sets**

**Monmouth
is the name**

R. I. Ups Size and Weights; Other States' Bills Passed

The Rhode Island legislature has approved H.704, a bill that will up maximum gross weights of tractor semi-trailer combinations to 46,000 lb. It will also establish maximum weights of 32,000 lb. on any two axles less than six feet apart, and a maximum length for single units of 35 ft. The bill awaits the governors signature at this time of writing.

The following are some bills already signed by state governors:

Massachusetts

Under emergency powers Governor decreed 40-mile speed limit as well as periodic inspection of tires.

Mississippi

H. 666 requires common, contract and private carriers in interstate commerce from outside the state to pay gas tax of six cents per gallon if not purchased in the state.

New York

Forty-mile speed law signed.

Virginia

Governor signed bill amending speed limits and authorizing him to lower limit to 40 miles.

H. 390 refunds portion of license fees when vehicles cannot be operated because of lack of tires and tubes.



Fleet Brake Service Manual

The United States Asbestos Division, makers of Grey-Rock Products, has just released a new 72-page Fleet Service Manual built exclusively for commercial vehicle operating and maintenance men. This book contains the full National Safety Council brake servicing schedule, specific recommendations for all trucks, buses, trailers and axles, full servicing and trouble shooting information on all brakes, a complete outline on all brake controls and much more useful and necessary information. It is available only to recognized fleet accounts through Grey-Rock jobbers.

NASH SPARE TIRE CARRIERS

*now made in all types
for all Trucks and Trailers*



Illustrated: The Nash One-Man Cable Lift Spare Tire Carrier. Under Frame Type for Trucks—

Fleet Operators: Tire changes on the road will be more and more frequent from now on. Equip with Nash Carriers and reduce "down" time to a minimum. Ask your Truck or Trailer dealer or write us for information.

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JONES PORTABLE TACHOMETER



The world's largest operators of commercial vehicles use Jones Portable Tachometers to check engine speeds for tune-ups, and setting governors, etc. Here are a few: Standard Oil Co., of La., N. J., N. Y., Shell Petroleum Co., Atlantic Refining Company, Tidewater Oil Company, Keeshin Motor Express.

Mack Trucks, Brockway, U. S. Navy.

Direct, instantaneous reading

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432 FAIRFIELD AVENUE

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KOETHERIZING

The accepted process for restoring pistons to original factory fit.

Every pulled piston should be Koetherized.

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Save Tires
BY
**REPLACING WORN
BEARINGS WITH**

LINK-BELT ROLLER BEARINGS



Tires wear longer when wheels are in perfect alignment. Worn front wheel bearings cause trouble—replace them with Link-Belt—the bearing that assures super-smooth action and perfect alignment because of exclusive roller and raceway design. Ideal for Differentials and Rear Axles, too!

Made by the makers of the famous Silverstreak Silent Timing Chain

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**The complete line
that completely satisfies**



Gasket craftsmen since 1906
The Fitzgerald Mfg. Company
Torrington, Conn.

Save Rubber for Defense
Use the Bear
ALINEMENT TESTER

• Keep daily check on wheel alignment and axle conditions by having your vehicles drive over the Bear Alinement Tester after each trip. Takes only seconds to make sure they are in alignment. Pays for itself quick in tire savings and increased safety! For free data Bulletin address, Bear Mfg. Co., Rock Island, Illinois.

BEAR



A DISCUSSION OF TRUCK RATIONING

(CONTINUED FROM PAGE 23)

job study to determine if their present equipment could be utilized more intensively? How could they prove their answers unless a thorough study were made? How many of the applicants made a thorough canvass of ALL OTHER operators in their area to find out if they could work out a pooling arrangement? What answer would an applicant be likely to get from his competitors? How many applicants know the names and addresses of all other operators in their area? How many operators know what is meant by pooling in order to discuss the problem intelligently with all other operators to arrive at an honest answer? Is a negative answer by other operators to the pooling proposal sufficient proof that the applicant has exhausted his efforts in this direction? How can the applicant prove that pooling is not the answer to his need for transportation equipment unless he knows how many vehicles all other operators in his area have in constant use and in reserve, the extent of their utilization, etc.? What operator is in position to make such a survey?

How can the applicant prove that he cannot lease the equipment he needs unless he submits a list of the operators and truck-leasing agencies whom he approached? Can this list be anything but a complete directory of operators and leasing agencies in his area if he is to avoid the accusation of having made a false statement or of not having answered the question "completely?"

How is the applicant to interpret the phrase "... or some other arrangement?" Would a horse and wagon classify as some other arrangement? Would a railroad? What did the authors of the application form have in mind when they referred to "other arrangements?" One arrangement they had in mind, of course, to judge by the official "Instructions to Applicants," was the transfer of vehicles used for "less essential purposes" to the use for which the new vehicle is being requested. How can any applicant determine this unless "less essential purposes" is specific-

Precision-built **AUTOCAR** TRUCKS

SHORT-WHEELBASE
OR CONVENTIONAL
GASOLINE OR
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IN ALL
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TRACTION
YOU NEED THORNTON**

THORNTON TANDEM CO.
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Manufacturers of THORNTON four rear wheel DRIVE and THORNTON Automatic Locking Differential.

The most important thing about oil is ...

KEEP IT CLEAN
with
PUROLATOR

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Level-Ride TRUCK SEATS

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BOSTROM MANUFACTURING CO.
MILWAUKEE, WIS.

DON'T TAKE CHANCES

with a Slipping Emergency Brake

Runaway trucks are dangerous and disastrous. **AUTOMATIC BRAKE CONTROL** gives you safe parking because it holds on all wheels by using your regular hydraulic brakes. Over the braking surface of standard emergency. It's Safe, Saves Repairs, lessens strain on drive shaft, starts smoothly, brakes quicker.

Ask your dealer for demonstration or write

AUTOMATIC BRAKE CONTROL CO.
DELAWARE, OHIO

THE Decalcomania that is . . .

FIRST in { **APPEARANCE
ECONOMY
DURABILITY**

Permalux "KOLORFILM"

PERMALUX "KOLORFILM" decals offer greater durability and economy in application and maintenance. Completely synchronous with modern truck finish, they last longer . . . look better!

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A 5th WHEEL FOR EVERY PURPOSE



Territory Available
AMERICAN STEEL FOUNDRIES
EAST CHICAGO, INDIANA

Buffalo MUFFLERS



Stop that
Noise!

BUFFALO PRESSED STEEL CO., INC., YOUNGSTOWN, OHIO

ally defined in terms of commodities carried? If military materials are an "essential commodity" isn't every other civilian commodity a "less essential" one? In that case how can any applicant qualify for a new truck unless all of his present trucks are engaged in hauling essential military materials?

For these reasons the ability of any operator to answer Question 10 complete with proof is seriously questioned. It is wondered if the Office of Defense Transportation expects a complete answer. It raises the suspicion that Question 10 simply provides a mass of technicalities with which arbitrary control over the approval of applications can be exercised.

Question 24, it is contended, will scare out honest answers and encourage subterfuge. This question asks: "If new vehicle is to be used as replacement, state make, model, mileage, and general condition of vehicle to be replaced and also explain why this vehicle cannot be repaired to serve your purpose?"

Experienced maintenance men will undoubtedly support the conclusion that it will have to be a rare vehicle—either so old that even junkyards cannot provide needed parts, or so wrecked that even modern salvaging methods cannot restore it to usefulness—that cannot be repaired to serve the same purpose as the vehicle being replaced. Only in those rare instances, therefore, will the question be answered honestly. The alternative is subterfuge. If the applicant really wishes to use the new vehicle as a replacement, he has the alternative of disposing of it, temporarily to a relative or friend, or permanently to some other person.

This is not to imply that subterfuge has been practised by some of (TURN TO PAGE 130, PLEASE)



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IMMEDIATE DELIVERY on Open and Closed Top TRAILERS AND CHASSES

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— Specially Designed for —
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It Costs No More for Trucks Specially
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CUSTOM-BUILT SETS
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(CONTINUED FROM PAGE 129)

those who have made application for new vehicles. The issue is raised simply to advance the contention that in all but rare instances honest answers to Question 24 will provide the rationers with technical grounds for rejection.

In fact there are those who believe that Question 23 should be eliminated, in which case Question 24 would go out with it. Question 23 asks the applicant to check whether the vehicle requested would be used as replacement or as additional equipment. They ask: While the dominant need is for additional equipment, and there are so few vehicles in the pool to go around to those needing additional equipment, why should anyone be granted the special privilege of replacement?

Question 26 is in four parts and, from the point of view of the trade, its value needs to be reconsidered. The applicant is asked to check (1) if the requested vehicle is being held by the sales agency and is ready for transfer; (2) if the requested vehicle must be manufactured to order; (3) if he is reasonably sure delivery can be secured within 30 days from a dealer having vehicles in stock at present; (4) if the requested vehicle is at present not held in stock, will the order be placed upon receipt of the Certificate of Transfer.

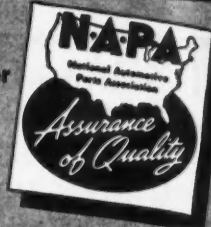
It is admitted that the checking presents no problem. But it does represent more paper work, more opportunities for slight errors that may be used as technical grounds for rejection or return of the application.

At the same time it is maintained that the questions asked have no bearing on the eligibility of the applicant for a new vehicle; that there is no point to No. 2 now that the manufacture of new trucks has been ordered stopped; that the answers provide no record useful to ODT and that the effort they involve should be conserved; that the problem of procurement after application has been granted need be no concern of ODT.

These are some of the arguments advanced in favor of a revision of the PD-310 application form.

The trade is assured by virtue of the calibre and experience of the men who make up ODT that complaints and suggestions will not be dismissed without consideration. COMMERCIAL CAR JOURNAL is informed that ODT

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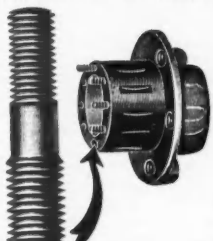
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100% Pennsylvania 35c a quart
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recognizes and sympathizes with the plight of the trade. It understands that ODT has recommended that the Reconstruction Finance Corp. extend financial relief. The plan would involve outright purchase of all new trucks and some provision for storage costs pending disposition.

Admission is also made that excessive zeal in the handling of applications resulted in the rejection or return of many applications but that overzealous regard for technicalities has been corrected.

The lack of control over virtually automatic transfers by means of PD-322 Government Exemption Permits is recognized and an attempt is being made to establish some sort of control.

END

(Please resume your reading on P. 24)

Size & Weights Standards Urged

Legislation to provide uniform laws governing motor vehicle sizes and weights was called for in a resolution adopted by the Southern Motor Vehicle Administrators recently in Miami, Florida.

The uniform specifications call for the following: Width, 96 in.; height, 12½ ft.; length of single unit, 35 ft.; length of combination, 45 ft.; weight, 600 lb. per tire inch; weight for one axle, 18,000 lb.; weight for two axles, 30,000 lb.; weight for three axles, 40,000 lb. for a single unit; weight, tractor-semi-trailer, 40,000 lb.; weight for truck and full trailer, 40,000 lb.

Weaver Alignment Manual

A new manual of wheel alignment, consisting of twelve sections bound in a loose-leaf cover, has just been announced by the Weaver Mfg. Co., Springfield, Ill.

The book is a complete text on the subject of wheel alignment and balance, and is especially designed to be used in teaching these subjects to both experienced and inexperienced mechanics. Copies are available at nominal cost.

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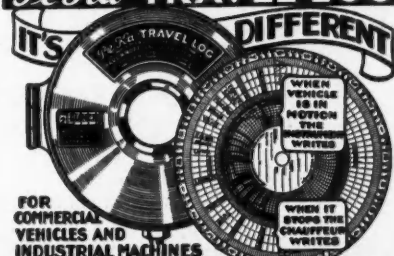
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A C Spark Plug Div. General Motors Corp.	—	Elastic Stop Nut Corp.	129	Packard Electric Div. General Motors Corp.	107
Acheson Colloids Corp.	125	Electric Auto-Lite Co., The (Merchandising Division) ...	13	Parish Pressed Steel Co., Subsidiary of Spicer Mfg. Co.	133
Ahlberg Bearing Co.	56	Electric Heat Control Co.	120	Pedrick Piston Rings	12
Airtex Automotive Corp.	124	Electric Storage Battery Co., The	39	Pennsylvania Rubber Co.	50
Albertson & Co., Inc.	71	Ethyl Gasoline Corp.	83	Permalux Company, The	129
Aluminum Company of America	3rd Cover	Everhot Mfg. Co.	124	Permatex Co., Inc.	3
American Automatic Devices Co.	122	Exide Batteries	39	Pierce Governor Co., The	123
American Bosch Corp.	82	Federal-Mogul Corp.	96	Purolator Products, Inc.	128
American Brakeblok Div. of The American Brake Shoe & Foundry Co.	69	Federal Motor Truck Co.	55	Quaker State Oil Refining Corp.	85
American Chain & Cable Co., Inc. (Automotive and Aircraft Division)	111	Fitzgerald Mfg. Co.	128	Ramsey Accessories Mfg. Corp.	8
American Hammered Piston Ring Co., Koppers Div.	127	Four Wheel Drive Auto Co.	Back Cover	Raybestos Div. of Raybestos-Manhattan, Inc.	79
Amer. Red Cross.	112	Fram Corp.	88-89	Reo Motors, Inc.	Front Cover
American Safety Tank Co.	118	Frink, Carl H., Inc.	131	Reynolds Mfg. Co.	125
American Steel Foundries.	129	Fuller Mfg. Co.	125	Rich Valves	2
Anthony Co., Inc.	120	Fulton Co., The	130	S K F Industries, Inc.	130
Armstrong Cork Co. (Building Materials Division)	99	Gatke Corp.	131	Salisbury Axle Co.	133
Arrow Safety Device Co.	78	General Tire & Rubber Co.	58-59	Sangamo Electric Co.	109
Atlas Fence Co.	125	Globe-Union, Inc.	87	Schrader's Sons A., Div. Scovill Mfg. Co.	94
Austin Trailer Equipment Co.	125	Goodrich Co., The, B. F.	110-134	Sealed Power Corp.	53
Autocar	128	Grico Two Axle Drive Co.	118	Service Recorder Co., The	51
Automatic Brake Control Co.	129	Hall Mfg. Co., The	131	Shuler Axle Co., Inc.	90
Autopulse Corp.	128	Hansen Mfg. Co., A. L.	48	Snap-On Tools Corp.	74
Available Truck Co.	130	Haskelite Mfg. Corp.	93	Socony-Vacuum Oil Co.	64-65
Bear Mfg. Co.	128	Hastings Mfg. Co.	63	Spicer Mfg. Corp.	133
Bendix-Westinghouse Automotive Air Brake Co.	97	Heil Co., The	130	Standard Oil Co. (Indiana)	11
Blackhawk Mfg. Co.	16	Hein-Werner Motor Parts Corp.	103	Standard Oil Co. of California.	101
Blood Brothers Machine Co.	123	Holland Hitch Co.	125	Sterling Motors Corp.	123
Bostrom Mfg. Co.	129	Hood Tires	110	Stewart-Warner Corp.	7
Bowman Automotive Plastics Co.	131	Hoof Products Co.	131	Superior Sheet Steel Co., The (Division of Continental Steel Co.)	6
Bowser & Co., S. F.	129	Ingersoll-Rand	122	Testing Apparatus Co., Inc.	124
Brown-Lipe Gear Co.	133	International Harvester Co.	127	Texas Co., The	4-5
Buell Manufacturing Co.	124	Jones-Motrola Sales Co.	127	Thermoid Co.	130
Buffalo Pressed Steel Co.	129	K-D Lamp Co., The	126	Thompson Products, Inc.	76
Carter Carburetor Corp.	66	K-D Mfg. Co.	67	Thornton Tandem Co.	128
Casite Corp., The	75	Kathanode Corp.	—	Timken-Detroit Axle Co., The.	73
Champion Spark Plug Co.	9	Kellogg Div. American Brake Shoe & Foundry Co.	62	Timken Roller Bearing Co.	125
Champ-Items, Inc.	131	Kerkling & Co., Inc.	—	Trailer Company of America.	126
Cities Service Oil Co.	108	Kingham Trailer Co., Inc.	129	Treasury Dept.	116
Cleveland Pneumatic Tool Co., The	131	Kinnear Mfg. Co.	127	Truckstell Co.	130
Cole-Hersee Co.	120	Knopf, Paul	131	Trucktor Corp., The	117
Continental Motors Corp.	72	Koppers Co., American Hammered Piston Ring Co.	127	Tyson Roller Bearing Corp.	47
Continental Steel Corp.	6	Libbey-Owens-Ford Glass Co.	127	U S L Battery Corp., Sub. The Electric Auto-Lite Co.	102
Crescent Co.	127	Lindsay Structure Division.	41	United States Asbestos, Div. Raybestos-Manhattan, Inc.	61
Cummins Engine Co.	1	Link-Belt Co.	128	Valley Electric Corp.	127
Curran Corp.	123	Lipe-Rollway Corp.	126	Van Norman Machine Tool Co.	10
Curtis Pneumatic Machinery Div. Curtis Mfg. Co.	126	Loney Co., Harley C.	123	Veedor-Root, Inc.	124
Daniels, Inc., C. R.	125	Luber-Finer, Inc.	70	Victor Mfg. & Gasket Co.	125
Dart Truck Co.	129	MacMillan Petroleum Corp.	113	W G B Oil Clarifier, Inc.	121
Dayton Steel Foundry Co.	126	McQuay Norris Mfg. Co.	2	Wagner Electric Corp.	57-105-109
Defense Savings Bonds and Stamps	116	Mack Trucks, Inc.	43	Walter Motor Truck Co.	104
DeVilbiss Co., The	128	Marmon-Herrington Co., Inc.	14	Waukesha Motor Truck Co.	126
Dodge Div. of Chrysler Corp.	2nd Cover	Marquette Mfg. Co., Inc.	68	Wausau Motor Parts Co.	130
Dole Valve Co., The	15	Meehanite Research Institute.	131	Weaver Mfg. Co.	80
Do-Ray Lamp Co.	121	Michiana Products Corp.	119	Weidenhoff, Joseph, Inc.	130
Dromgold & Glenn.	126	Midland Steel Products Co.	45	White Motor Co.	49
Dry-Zero Corp.	41	Milwaukee Dustless Brush Co.	126	Whitehead Stamping Co.	123
Duro Metal Products Co.	120	Modern Equipment Corp.	95	Wilkening Mfg. Co.	12
Eberhard Mfg. Co. (Div. of the Eastern Malleable Iron Co.).	77	Monmouth Products Co., The.	127	Willard Storage Battery Co.	81
Eclipse Machine Div. Bendix Aviation Corp.	84	Monroe Auto Equipment Co.	100	Wiry Joe	127
Edwards Iron Works, Inc.	52	Nash & Bro. Co., L. B.	127	Wisconsin Axle Division.	10
		National Automotive Parts Association	130	Wittekt Mfg. Co.	46
		National Refining Co.	60	Wohlert Corp.	126
		Oakite Products, Inc.	118	Wolf's Head Oil Refining Co.	131
		Ohio Piston Company	98	Yankee Metal Products Corp.	130
		Oshkosh Motor Truck, Inc.	131	Zenith Carburetor Div. Bendix Aviation Corp.	86
		Owens-Corning Fiberglas Corp.	106	Zollner Machine Works	129